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NORFOLK, like Warwickshire, of which we spoke last week, is studded with structures, which interest not only the architectural antiquary but the practical architect, inasmuch as they afford numerous examples and hints for modern application. The Archæological Institute met in the capital of this county last week, and continued their labours there during a part of this; and we propose, as in the case of the "Association," to give some notes of the principal places visited, and the heads of such of the papers read as illustrate these places, or contain information likely to interest a large portion of our readers. We do not intend to chronicle the names of all the distinguished persons who attended, the profuse hospitality which was offered to them on various sides, or even the purely antiquarian matters which came before them for discussion. The question whether Norwich, or Caistor, be the *Venta Icenorum* of the Romans,* argued in favour of the former by Mr. Hudson Gurney, notices of ancient monastic mortuary rolls, ably as they were written by Mr. John Gough Nichols, histories of Saxon kings, and all matters of this kind, must be left to other hands, the architectural antiquities alone would afford us more matter than we have space to include.

St. Andrew's Hall, where the introductory meeting was held (the bishop of the diocese being in the chair), was originally the nave and aisles of a large perpendicular church, built at the commencement of the fifteenth century, and has an open timber roof. It belonged to a monastery of Dominican friars, of which there are some curious remains now used as the workhouse. The election, (when, by the way, Mr. Peto, one of the "craft," was returned at the head of the poll to represent the ancient city in Parliament,) afterwards closed this apartment against the Institute, and forced them to take refuge in the public library and the *Guildhall*.

The latter building was erected quite at the commencement of the fifteenth century (1407-13), and is chiefly remarkable externally as a specimen of flint work,—a mode of construction very prevalent in Norwich and the neighbourhood. The council chamber here retains the wood fittings of about the time of King Henry VIII. This, and the adjoining apartment, also contain some curious portraits of past officers.†

NORWICH CATHEDRAL

is a very interesting structure, rather more than 400 feet long, with a tower and spire 313 feet high. The greater part of it belongs, as will be seen hereafter, to the Norman period, and internally is in a good state of repair. Some years ago it had fallen into a deplorable condition, but since the advent of the present dean much has been done, as may be supposed when we say, that from twenty-five to thirty thousand pounds have been spent in the repair of it within these last fifteen years. The works are still in progress under the direction of Mr. Brown, the architect to the dean and chapter.*

Professor Willis gave a discourse on the cathedral in the public library, and illustrated it by a number of diagrams to shew the general arrangement, and enable him to point out the date of the different parts. We proceed to give the heads of his discourse from our own notes.

It had been his lot, he said, in the division of labour made by the institute, to illustrate the cathedral in each of the towns they had visited. All had been distinguished by some peculiarity; Canterbury, by the existence of important documentary evidence; and Winchester, by the curious conversion which had been made of Norman work into perpendicular. In Norwich, much the same alteration had been commenced, but was not carried out; its most valuable peculiarity, however, was as it related to the inquiry into the existence of Saxon architecture in England. Those who had difficulty in believing that there was none, could attribute the earlier parts of the other cathedrals to the Saxon time, Saxon buildings having originally occupied their site; but in Norwich, no doubt could be raised, as the see was removed from Thetford only in the time of William Rufus, and the cathedral then erected where no other building existed. The original structure then was purely Norman, yet many parts of it were as rude as that which was called Saxon in other places.

There had been very little alteration in the plan; it consists of nave, tower, transepts, and a very considerable chancel or presbytery, with aisles to each. The chancel terminates with an absis with an aisle around it, known always as the "procession path," and various chapels of peculiar form branching out of it. The Norman part of the cathedral is of two periods, he said, as was shewn by the bases of the columns and by the zigzag ornament around the arches of the later part of it. He could prove that the zigzag was not introduced till very late in the Norman style. The choir was usually supposed to be that portion of the building wholly east of the transepts; ritually speaking, the term distinguished simply that part where the monks sat to sing, and which in this case included the space under the central tower and a part of the nave. The more eastern portion was appropriated to the priests, and was called the presbytery. The episcopal throne was originally against the *end* of the eastern part, a peculiarity confined to Norwich, and was so high up, as to be upon the wall which divided the presbytery from the "processional walk;" its remains were visible. The rood loft, he considered, was originally at some distance down the nave. The aisles were formed into chapels; we had no conception how greatly these buildings were cut up and divided by screens and enclosures,—obstructions which perhaps had more effect in leading to the reformation than more important matters.

It was now time to speak of the written history of the cathedral. It was founded by Bishop Herbert de Losinga in 1096, who nearly completed it, together with the monastery and bishop's palace, concerning which he would speak hereafter. The next historical record was, that John of Oxford finished the church that Herbert began; and in his time, 1171, the church was burnt. The lecturer said it was amusing to see how the antiquaries of a few years ago amplified their authorities: Blomefield was of this class; he interpreted Latin statements his own way, and so asserted things for which he had no grounds. In 1272, the monks and citizens being on very bad terms, the latter rose, burnt the records, and sacked the monastery. Documents prove that the church was miraculously preserved, and the lady chapel burnt, but Blomefield by some accident states this *vice versa*. In 1278 the church was re-dedicated, and he ought here to speak of the gateways, but as Mr. Britton had promised them a paper on that subject, he would pass them by. To this gentleman (he would take occasion to say) he and all other antiquaries and architects were greatly indebted, and he was most happy to have the opportunity, there in his presence, of acknowledging it.

In 1299 considerable repairs were made to the tower, the spire of which, probably, was at that time of wood. He now came to a point which had not been thoroughly investigated, namely, the cause of the present appearance of the choir,—where the Norman work was seen only in the middle part of the walls,—the triforium. The upper part and lower part were both of later character. On the 15th of January, 1361-2, a furious hurricane did much mischief in various parts, damaging, according to Holinshed, many mighty buildings. On this occasion the steeple of the cathedral under notice was blown down, and in its fall materially damaged the presbytery. The ancient rolls, preserved in the treasury of the cathedral, shew that considerable outlay for repairs was made in 1364 and 1369; and it was then that the present clerestory was constructed under Bishop Percy. The vaulting was done subsequently, and so were the flying buttresses externally: these latter not being needed till the vaulting was put up, the thrust of which they were intended to withstand. The style of the clerestory was between decorated and perpendicular, and having a precise date, was a very valuable example.

The next event was a conflagration in 1463, when the spire being struck by lightning, set fire, probably, to the roof of the nave. It might be taken as a principle, that the medieval ancients never repaired or altered buildings out of wantonness: when any accident happened, then they enlarged or rebuilt. The wood roof of the nave, in the present case, being destroyed, they put up a stone vault, and afterwards carried it on to the choir, the date of the vault, which may be called 1498. At this same time, the lower part of the choir was altered to the perpendicular style. The present spire was of later date. And here he would conclude his remarks on the cathedral until he met them within its walls.

He had now to speak of the monastic buildings surrounding the cathedral, and he pointed the attention of his audience to a plan of them which he had prepared. This was a matter to which he had given much attention at Canterbury, where his views had been borne out by an ancient plan afterwards discovered. Great confusion had been caused by the haste of the early antiquaries. Whittaker, one of the earliest in this department, had described Fountains Abbey, in Yorkshire, and laid it down as a type of all others. Succeeding writers had not investigated for themselves, and had perpetuated errors. We must pursue a

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* Thus disposed of by a well known old distich:—
"Caistor was a city when Norwich was none,
And Norwich was built of Caistor stone."

† "A tower, which had been added to the original building, fell down and destroyed the roof of the Council-chamber, which was restored, and other repairs made, in 1334, to which period the present fittings may safely be referred. The wood-work is ornamented with the linen panel, and with small figures of a lion, grey-hound, and dragon, used as poppies. In the panels are the arms of Henry VIII., Norwich, the Mercers, St. George's Company, the Grocers, and Merchant Adventurers. The windows are filled with painted glass of different periods, with several shields of arms; amongst these occur, the Scriveners, the City of Norwich; those of Robert Browne, mayor in 1582; the rebus of Bishop Goldwell; a merchant's mark impaling the Grocers' Company; and the arms of Robert Dudley, Earl of Leicester, who was connected with this county"—*Notes of the Churches, &c. of Norwich; by a Member.*

* Mr. Brown built Lee Church, near Blackheath, and several others. Amongst them St. Mark's, at Lakenham, on the Southern side of Norwich, where the mouldings, water-tables, &c., are of moulded brick. The face of the walls is of flint-work with white brick quoins. Mr. Kerr, the clever author of the "Newleafe Discourse" has recently joined Mr. Brown in partnership.

different course: give up altogether what they have said, and take nothing for granted.

The cloisters at Norwich had been tolerably well preserved; they were the largest in England, and had a recorded history. Doors opened from them into the burial-place and adjoining offices. On the east side of the cloisters, and communicating with them, remain the foundations of a building, which had been called the Prior's Chapel, but which he would call the Chapter House. William of Worcester, who wrote in the time of Henry V., and had explained the uses of some of the doors in the cloisters, made this fact certain. He says, that in 1297, the cloister was begun, together with the Chapter House on the east side of it. The rest of the cloister was of later date. In 1409 other doors had been put in, leading to the lavatory and refectory: and in 1430, to the Guests' Hall.

There was formerly a curious building on the south side of the cloister, which was foolishly pulled down thirty years ago. It was fortunately figured by Mr. Repton in the *Archæologia*. This, the lecturer would call the Infirmary. The refectory was on the west side of the cloisters, also the guest's hall, next it. The dormitory was probably connected with the south transept. The monks often had nocturnal duties; when they rose in the morning too, they went first into the church, and then to the cloister to wash; the dormitories were therefore generally placed near the transept, to enable them to get to the church without going into the air. At Canterbury there was a covered way from the dormitory to the transept. Mr. Willis then reviewed the general arrangement of the Bishop's Palace, on the north side of the church, the great hall further north, destroyed in Cromwell's time, and other buildings adjoining, and concluded by inviting all who were willing, to accompany him over the cathedral, an invitation which was responded to by a large number of persons.

The general examination, which was then made, shewed much to interest. The great western window was pointed out as closely resembling the large window in Westminster Hall, and the size and beauty of the Norman triforium was dwelt on at some length. In the nave are two cylindrical columns, one opposite the other, with spiral mouldings around them from bottom to top: it was seen on examination, that the upright joints of the stones in these are oblique, to agree with the lines of the moulding.

In the upper part of the outer wall enclosing the "procession path" on the south side, a small chamber has been recently discovered, with a hagioscope or squint, commanding the high altar. It was, perhaps, the cell of a recluse,—a hermitage. On the north side of the presbytery there is another squint, serving with the one last-mentioned, to point out the exact position of the high altar originally.

In the chancel, a singular circumstance is observable. The original Norman piers and arches, according to Mr. Willis, range with those in the nave, but when the perpendicular work was added, it was arranged so as to make the line of the chancel incline slightly to the south: whether this was through accident or carlessness, or was done on principle, as the professor seemed to think, it is difficult to say.

The escape of the cathedral from destruction at various times appears almost miraculous. As late as 1650, it was gravely threatened, for we remember to have seen that in that year, a petition was presented by the people of Yarmouth to the Parliament, praying for "a part of the lead and other useful materials of that vast and *altogether useless* cathedral at Norwich, towards the building of a workhouse to employ our almost starved poor, and repairing our piers." Tolerably cool, it will be confessed.

We must not, however, give longer time to the cathedral at present, or we shall leave ourselves no space even to allude to the numerous churches which adorn Norwich. A walk round the base of the castle, a Norman keep sorely marred by a spic and span new casing, and battlements of most questionable design,* will shew you how numerous the churches are, thirty-six if we remember rightly, and give a notion of their general character. Some architectural notes of these and other ancient buildings, by Mr. Parker, were printed in the shape of a pamphlet for the members, and found very useful. The introductory remarks on the peculiarities which distinguish them, may be here quoted.

"Archæologists, not previously acquainted with East Anglia, may wish to have their attention called to those particular points which are most characteristic of this part of the country. The scarcity of stone gives at once a different character to the buildings from those of most other parts; the only building material of the country being flint, the walls are almost entirely constructed of it, and frequently faced with cut flints also, of which there are some very good examples in the city of Norwich. The dressings are usually of stone; and there are numerous and beautiful specimens of what is called 'flint and stone panelling,' in which the interstices of stone panelling are filled with cut flints, producing a very singular and striking effect. This kind of work is most common in the perpendicular style, but there are good examples of it in the decorated work also, as in the gates of the Close at Norwich. The end of the fourteenth century, the period of the transition from the decorated to the perpendicular styles, seems to be that in which architecture was most flourishing in Norfolk; and there are many fine examples of this transition, particularly Worstead and Ingham. In the small plain churches the dressings are frequently of brick, and sometimes the mullions also, so that many churches are built entirely of flint and brick, without any stone. Almost all the arches over doors and windows in plain buildings, and those of the city walls, are of brick: in the earlier buildings these bricks approximate in shape to the Roman tiles; in later specimens they are the common Flemish bricks. In poor churches the towers are commonly built round, and of flint entirely, to save the expense of quoins; these round towers are consequently of all periods, from the earliest known buildings to the present time. The fine screens and other woodwork form quite a leading characteristic of the Norfolk churches; many of these screens have beautiful paintings of the apostles and saints on the lower panels.

The roofs are generally open to the ridge, of high pitch, originally covered with thatch, and many still are so; they are not so rich as the Suffolk roofs, but there are many fine open timber roofs in Norfolk. St. Peter Mancroft in Norwich is a good example. In that church there is also a wooden baptistery of the fifteenth century, mutilated; in the church of Trunch there is a similar one perfect: these and the earlier one at Luton, in Bedfordshire, are the only examples known in England. Of the ecclesiastical embroidery of the middle ages, specimens in Norwich and the neighbourhood are more numerous than in most other places.

Norwich abounds with fragments of the domestic architecture of the fifteenth and sixteenth centuries.

Norfolk is also justly celebrated for beautiful examples of the moulded brick mansions of the time of Henry VII. and VIII., of which the ruins of East Barnham Hall afford a good specimen.

The churches of Norfolk abound with magnificent fonts of the perpendicular style, bearing a great general resemblance to each other. In this respect, and in some others, there is a remarkable coincidence between the east and the west of England; similar fonts are common in Somersetshire and Devonshire. The towers, when square, are generally lofty, and sometimes much enriched with panelling of flint and stone. A feature almost peculiar to this part of England is the small window or opening, filled with rich tracery, in the middle story, commonly called sound-holes, but perhaps more properly air-holes, as their object seems to be to give air to the ringing loft under the belfry."

To some few of the churches and buildings thus generally characterized, we shall refer more particularly hereafter; also to the ancient gates, on which a paper was read by Mr. Britton, and give notes of the excursions to Walsingham, Binham, Burgh Castle, Yarmouth (where the American minister, Bancroft, made a speech which will be remembered by those who heard him), and to Ely Cathedral. In the meanwhile we lay before our readers an engraving of the beautiful Early English Galilee porch at the west end of the latter building, from a drawing made by Mr. Caveler for the purpose.*

Ely Cathedral is truly a magnificent and instructive edifice; great works are going on there too, and further, a painful interest attaches to it as the scene of a fatal accident to an able architect.

* There is a full account of this curious structure, entitled "The History and Antiquities of Norwich Castle," by Samuel Woodward, published by Mr. Muskett, in the Market Place, Norwich. The castle is also described in the *Archæologia*, Vol. XII., by the elder Mr. Wilkins, of Norwich.

ON THE DUE CULTIVATION OF THE FACULTIES FOR THE ARTS.†

When cheap art is made as correct as that which is highly wrought, and, therefore, expensive, we shall then have the lower classes much better members of society. The boys who are educated in the national schools ought to be taught the elements of geometrical construction just as much as they are taught arithmetic. Then would labouring, apprenticed, and journeymen mechanics be much more valuable to their masters, and their own position would be much improved. I fear there is not one person in a thousand of this class who could construct a perpendicular, bisect and divide a line into a given number of parts, make an angle equal to another, construct a triangle, a square, a pentagon, &c.; and yet how often are they working upon such matters, without any knowledge of their foundation? Not even a tradesman should be ignorant of the principles of construction; for the more he is informed upon the goods in which he deals, the better purchaser and seller he must be. A few years ago I gave ten lectures on geometrical construction and perspective to the first class of about thirty-five boys of a national school, and, with the exception of four who were rather dull, they mastered the subject with very little difficulty; and the four dull ones were enabled in that time to draw chairs, tables, &c., perspectively, while the others advanced into more complicated objects, as the room with its windows, &c.; shewing that the faculties which the Creator has given for producing certain forms, colours, &c., only require to be legitimately exercised to be more available. It is only the more extraordinary when we know that such faculties are given, that they should be so grossly neglected as they are. The heads of education know that there is not a single thing made but by the faculties of form and constructiveness, and yet they have not provided for their due exercise, further than permitting them to be employed more often than not upon all sorts of nonsense, that they may be amused, but by no means informed. From the manufacture of a pin to the building of a palace, the painting of historical and landscape pictures, the sculpturing of statues, and engraving in its various branches, all are the results of the faculties of form, colour, constructiveness, &c., which should be sufficient to satisfy the educators that a due cultivation and sound exercise of these important faculties should most seriously occupy their minds in

* See page 374. Next week we shall give a fine view of the east end of the Cathedral, a charming specimen of early English work.

† See page 361, *ante*.

order to devise a system of instruction by which they might obtain that high state of activity and perfection to which they are continually appealed. If the organ of form is to be cultivated, it must be exercised in accordance with the rules of perspective upon natural forms, because natural forms and natural faculties are in harmony with each other, each being made for each. This must be admitted by every one, and simple enough it is; nevertheless, how often are natural forms made to give place to all sorts of artificial forms in artistic instruction. The physician and surgeon investigate the structure of man and animals, the botanist does the same in the botanical kingdom, the geologist is ever searching through the depths of the earth, the chymist analyses, in order to discover the different properties of the works of creation, the astronomer explores the heavens, &c. But the student in art has not such scientific instructors. The commencement of artistic instruction in the human figure, landscape, marine, and architecture, is made up from drawings and prints, which may be good, bad, or indifferent representations of the objects proposed for imitation; and though the objects themselves might not be the most proper or convenient to place before the pupils at the commencement of their instruction, yet the most accurate representations, either in models or drawings, should be selected for the lessons, that the pupils may not imbibe false forms, meritricious execution, whims, fancies, and conceits, which may be part and parcel of the mind of the instructor, and, therefore, as such, would be produced in his lessons as most fit and proper for imitation. Such lessons, however skilfully executed, would be sure to cause great mischief in the mind of the learner, for though they might contain much ingenuity, yet but little truth might be in them, when the peculiar turn of mind of the pupil would be diverted out of its own channel by being obliged to learn the artificialities of a very different turn of mind, causing great pain in his mental powers while subjected to such errors and confusion. Elementary instruction should be truth itself, that a true foundation be laid in the youthful mind, on which all that is noble may be based. From such a foundation every excellence may be expected, and that which is most important, the original mental arrangement will be preserved and perfected. Originality of thought in either department of the sister arts, the result of an unsophisticated and an inventive mind, is lauded by the great and good, and upheld as a model of perfection; so highly and so deservedly is original thinking and invention valued. Such great lights unfortunately but seldom appear; no doubt in numerous instances from the incongruous elements with which brilliant minds have been fed. The nature of the human mind should be well investigated, and when thoroughly understood, all instruction should be adapted to it accordingly. The subject in itself is simple enough, for truth is the watchword and guide; but if this polar star is lost sight of, it will be vain to steer for its place of destination, perfection-haven; she must then either resign herself to the fate of the elements, or run herself into the first harbour of refuge that presents itself. Let truth then be the cry, and all will be right. Nothing short of a radical cure of the evil wherever it may be should be received. A radical cure of a disease is prayed for by every sufferer; and so should a radical cure be required in all unsound instruction, for a greater evil there cannot be than the perversion of the human mind. It matters not what part of the human mind is turned out of its due course by wrong instructions. The evil is equally great, and should be eradicated without delay, that its contaminating influence may penetrate no further. The rising generation require a new beginning, one that is entirely free of the old worn-out, thread-bare, patchwork, having nature for its foundation, that the truth may be received, and stored up in the mind as the only materials that should be used in inventive art. The branch of art matters not, the principle is the same; for whether it be painting, sculpture, or architecture, the student's mind must be exercised in the boundless field of nature, whose inexhaustible store will always supply the student with the true materials that he may require for effecting his designs. An artist in historical or landscape painting succeeds in proportion as he collects his studies from nature. If he depends upon antique statues for the forms of his figures, and old pictures for arrangements of colour and light and shadow, he will ascend no higher in the scale of intellect than a mere copyist of other's art, instead of aspiring to the high calling of an inventor and designer. If a sculptor imbues his mind with the forms of Greek and Roman sculpture, because he fancies they are more beautiful than the human forms he has seen in nature, he must also rest satisfied with the name of a copyist. Michael Angelo Donatello, Beccafumi, and other great sculptors did not stoop to the works of others, but studied mankind as the fountain head from which the knowledge of human form flows. If the architect places himself before the Greek and Roman temples, and settles the matter in his own mind that they are perfection, and, therefore, copies those buildings to help him in his designs for Christian houses of prayer, palaces, mansions, dwelling-houses, club-houses, gin palaces, villas, cottages, &c.; he must expect to fail in design and invention. For however perfect were the Greek temples for the time and pagan purposes for which they were erected, they must of necessity be the most imperfect for Christian worship and for the convenience and domestic comforts of the people of 2,000 years afterwards. This point alone should satisfy architects, that as Greek architecture reflects the highest credit on its designers, they should do as the Greek architects did,—they studied how to produce what was required in their own days, and not what others required 2,000 years before them.

The exhibitions of modern pictures sufficiently shew by their great talent the truth of these remarks, as a great majority of the subjects have come under the artist's observations, and those which belong to far by-gone-days are the result of accurate study from similar objects in nature, made by correct thinking to represent the beings and things which are part and parcel of the subject. This is the true course for a student to pursue, if he wishes to become an artist in painting, sculpture, or architecture. Students must no longer deceive themselves in either of the sister arts: in the one of painting there is not much danger; but in sculpture and architecture there is much yet to be done. The students in these arts are very inadequately trained and most defectively taught. The painter is in the right path, and only requires to know how he may arrive at the end of it. When a more enlarged course of instruction is produced for his tuition, then works of high art will be the result at his hands: the major part of such a system of instruction must be embraced by the sculptors and architects also, if they aspire to works of high art. And though, as we have said before, that division of labour will be; nevertheless, the painter, the sculptor, and the architect should have a common understanding in each other's art, otherwise, to a certain extent, they must be defective in their own art. The sculptor should study the beings and objects as much as the painter, only with this difference —using his own tools, though he should not be sparing with the pencil, chalk, and brush, that he may collect action and expression the more readily, which is ever before him. He should never be without a sketch-book and pencil, that he may be always ready to collect such materials which will furnish him with ideas, and facilitate him in his execution. Also, he should have a correct understanding of architecture, that he may compose, arrange, and design more perfectly his own works to accord with the situation in which his sculpture is to be placed. The architect must act in the same manner; he must study from nature, if he expects to be a designer in architecture. Nature will supply him with the materials for his art.

It may be said that clouds, mountains, hills, woods, vallies, rivers, &c., will not furnish the architect with forms for his buildings: this is a point not to be settled so quickly. Nature is the fountain head of all knowledge, she furnishes the historical, the landscape, the marine, the flower and the architectural painter, with the materials for his art. Buildings and sculpture are made up of natural materials; so far those parts of nature must be studied by architects and sculptors. But the sculptor's art is to represent man and animals, foliage and flowers, as well as artificial forms, drapery, architecture, &c., all of which should be most accurately studied by him if he intends to produce faithful representations. He must as a designer become well acquainted with the nature of man. He should have a thorough understanding of the human mind in order to represent that action and expression which would embody the leading characteristics and peculiarities of mind of the beings who are to be handed down to posterity by sculptured art. Sculptors of late have not been sufficiently educated as artists. They have not been directed to nature to collect their materials for effecting their designs. They have been taught to imitate the antique, and to regard the Greek statues as perfection, until at last they are so strongly imbued with the Greek forms and attitudes, that they cannot help infusing the peculiar beauties of the Greek sculpture into their own works, turning English ladies and gentlemen into Greek gods and goddesses, losing the individuality and mind of the persons, and consequently the deep interest which the relatives, the friends, and the public would feel if they had faithful representations to regard.

The late highly talented sculptor, Mr. Flaxman, stated to me that he felt the defects of his education to be an insurmountable bar to his improvement as a designer. He considered the system of artistic instruction under which he studied to be very injurious to an artistic mind; it laid an artificial foundation, and therefore arrested invention; a loss which no artist ought to sustain. On all occasions he felt himself under Greek trammels, so much so, that when interesting groups of people presented themselves to him, he could not help giving while sketching them a Greek statue-like character; one he made like a Hercules, another like the Apollo, a third like an Antinous, a fourth like the Venus, and so on; each person resembling statues instead of living beings, giving the thousanth edition of pagan gods and goddesses, for the ever new and highly interesting action and expression of the people who were continually assembling in groups as business and accidental matters brought them together. This artificial quality of mind, which was inculcated in him at his early education he deplored greatly, and wished much to eradicate, but he could not accomplish it. As great as Mr. Flaxman was, he failed in the representation of natural action and expression, producing a fixed and stone-like appearance, instead of the motion of life, of flesh and blood. We will now say a few words on architecture.

Should an architect be an artist or not, or should an architect make himself acquainted with the different branches of the arts, in order to perfect himself as an architect? Will a study of the works of creation enlarge the architect's mind in architectural design and construction, or should an architect rest satisfied with his present amount of geometrical and building knowledge, and conclude that it is not necessary for his faculties for the arts of design to be legitimately exercised? Is this satisfactorily established? Do the results prove the truth of this point, or do the modern architectural designs express their object. For instance, do the modern buildings express in their architectural forms, divisions, and arrangements, the purpose for which they were erected? Does Buckingham Palace express by its architecture a palace for an English sovereign, or do the architectural forms, divisions, and arrangements signify English design, or Greek, Italian, and Roman? Do the different club houses express in their designs, the object for which they were designed—English refreshment houses of these days? Do the street houses express what they were built for? Do many of the modern mansions in the country inhabited by the upper classes, express English mansions of the present time? Does the Bank of England express in its architecture its particular purport? Do its empty niches remind us of the different governors and directors of that great monied establishment, and that the Greek, Roman, and Italian architecture with which it is composed express truly an English bank? Does the Royal Exchange express in its classic portico a London building of exchange? Do St. Martin's church, St. George's Bloomsbury, and the like, express, by their Roman architecture, and which was originally designed for Pagan worship, a Protestant place of worship? Does the National Gallery express its name? Even in this gallery of art, the designer appears not

to have had the power of filling his niches with statues representing the great artists which England has produced. In this point no excuse can be found, as the designer of the building should not have assented to empty niches, but he should have shewn the absurdity of such senseless emptiness, and the loss of his character as a consistent designer. Consistency of design should never be lost sight of in any branch of the arts; and why should not the architect be as consistent a designer as an historical painter? The historical painter would not represent a pagan temple for a Christian church, because it would falsify the time. The pagan temple might denote a time of 2,000 years ago, which would be a great error, and such an inconsistency should not be allowed either by designers or the public. But to become consistent after having been inconsistent for a length of time, is by no means easy; nevertheless we should endeavour to free ourselves from such errors and confusion, that we may lay a sound foundation for receiving true knowledge, from which consistency of design may be produced. The architects of ancient time,—the Israelites, the Egyptians, the Babylonians, the Greeks, and Romans, designed consistently. They designed their places of worship in accordance with their rites and ceremonies, obtaining by those means exactly what they required; for however true, or however false were their notions, they carried them out to their very letter in their sculpture and architectural divisions and arrangements. The Israelites executed the designs for the tabernacle and temple which God gave them. The other nations executed the designs which their pagan oracles gave them, and, therefore, they had their places of worship exactly adapted for their abominable and inhuman pagan sacrifices. The Christian architects of the middle ages designed in the same consistent manner. They knew what they wanted, and they designed in accordance with those wants when they were upon a true foundation, as well as when that foundation became disturbed with numerous errors,—the production of evil-minded and ignorant men,—as our cathedrals, abbeys, and churches sufficiently testify. The cruciform foundation of our churches shews that the Christian architects were true designers; for the faithful, when in prayer, would always be upon the cross, as our Saviour was, when he sacrificed himself for the salvation of mankind. This principle is a true one, and shews that the designer was a master of his art by making his subject appear in his architectural arrangements. And further, for upon this foundation of a cross-form they composed other leading features of the law and the gospel, such as three divisions of nave, choir, and chancel, to symbolise the Trinity; the number of columns, windows, arches, buttresses, &c., being so designed as to signify important points in the Word of God: so that when the architect makes his architectural and sculptured forms, divisions, and arrangements, speak, as it were, to the subject for which it was designed, he then shows himself to be a true designer, and therefore an artist, which he ought to be. His building then is a work of artistic invention—an illustration of his subject by the means of his art—making the most important points evident to all beholders who have been initiated in the architect's language: all works of art should be made to express what they are intended for, that intelligence may be seen, information conveyed, and the mind legitimately exercised. A designer is an artistic instructor; but if his design expresses that which is foreign to the subject, he is then a confounder—as in the case of St. Pancras or Marylebone Church, which remind the beholder of Greek and Roman Pagan temples, and consequently not of Christianity, which they should do. And moreover, they make the impression that Paganism is as interesting as Christianity, and that the Christian doctrine is incapable of architectural illustration—shewing great ignorance of the subject and of the power of his own art. Besides, a preference given for such forms which were designed for Pagan purposes to those which should be the designer's duty to produce upon a Christian foundation, is so great an absurdity, that one cannot reconcile it to be the act of a rational being. Let us see, then, in what position do architects stand with respect to rational design. During the last three centuries the religion of the state has been Protestant, and, therefore, our houses of prayer should have been designed in accordance with that reformation. That the Roman Catholic designers made their designs in accordance with their mode of worship, and based upon the law and the gospel and the early fathers' writings is evident to those who understand the true principles of design; and therefore, according to their belief, they acted upon true principles, making their churches express the leading features of the law and the gospel, and also the peculiar views of the early saints as well as the Roman Catholic saints. But because the churches of the middle ages were thus correctly designed, that is no reason why we should design Protestant churches like them. We should design our churches for Protestant worship, and for such as the altered state of the times of these days demand. Neither Roman Catholicism or Protestantism are the same now as when they were first established; and so we find the arrangements altered to suit the alterations which from time to time were made in the mode of worship. Though the law and the gospel remain the same, yet the application of them to these advanced times of intelligence must vary, and be made to assimilate with the demands of the present state of society. Then what has the architect to do but to conform to the improved state of society in which he lives, and to design to meet the wants of the living, and not for the dead? This is not done. The architect should make himself acquainted with the subject for which he has undertaken to design; for whether it be a church, a palace, a mansion, a town-house, a villa, &c., he should make himself well informed upon the wants of the parties who require the buildings, and then design accordingly; and not as he has done by endeavouring to make the buildings of two or three thousand years ago suit the widely altered civilized state of society of these days. Common sense, design, invention, composition, colour, &c, forbid such an inconsistent practice. Natural knowledge must be planted in the human mind if excellence is to be attained. In science it is every thing; in art it ought to be the same; and it must be made so sooner or later, or design and inventive art will cease to exist. Every member of the sister arts should not rest satisfied until they have made themselves artists in every sense of the word. And every manufacturer and mechanic, as well as traders, should have their mental powers well exercised in form, colour, and constructiveness, in order to have a full comprehension of all the objects and wares with which they are connected in their production, as well as in their purchasing and selling. After which, what is to be said of the labourers? They are human beings, and possess mental powers often to a great extent. Some provision should be made for a due exercise of their faculties for the mechanical arts, that they may be made more useful labourers in their calling. God is their Creator as well as our Creator, and their faculties should be turned to the best account. Let us hope that the legislature will see the necessity of establishing such a system of instruction, which will raise the lower classes from the degraded state in which they are to one of a higher and more intellectual condition, when we should see them devoting their leisure hours among the works of creation, instead of wasting it in brutalising their minds and diseasing their bodies in gin palaces and beer-shops.

G. R. Lewis.

THE ANTIQUARIAN RAMBLE IN WARWICKSHIRE.

COVENTRY CHURCHES—FORD'S HOSPITAL—ST. MARY'S HALL—TAPESTRY—KINGSBURY.

We continue our remarks on the places visited by the British Archæological Association, and the papers in connection with them which were read. We left off last week in *Coventry*.

The appearance of this ancient city is rendered peculiar and striking by the three lofty and taper spires which belong to St. Michael's, the Trinity, and the Grey Friars' churches. They afford one among many other instances that the medieval architects, equally with ourselves, resorted to precedent, and that one building materially influenced those which came after it.

St. Michael's is a fine old church, of large size (sittings for 2,500), much requiring repair and restoration. Externally it is built of the old red sandstone, and every line of the lower part, especially where the smoke has effect, is obliterated by decay. This is the case with most of the buildings in Coventry, and it is greatly to be regretted that in some cases where restorations are attempted the same stone is used. Experience does not always teach. The length of St. Michael's is called 294 feet, and the width 127 feet. The height of the tower and spire, according to Dugdale, is 300 feet. The church is in five divisions internally, and has a five-sided absis. The body of the church was erected at the end of the fourteenth century. The spire, a fine work, was finished by two sisters in 1434, and great part of the church was afterwards rebuilt. The arches are flat and wide, and the details inferior to those of earlier works. There is much of the old wood work remaining. There is a gallery in the south aisle carried on wooden uprights, independent of the column.

At *Trinity Church* external restorations are going on under Mr. Hussey. On the west side of the arch here, at the junction with the transept, is a very extensive and curious wall-painting, which was discovered a few years ago. It represents our Saviour and the last judgment; and contains a large number of figures. If it has not been engraved, it should be commenced forthwith. The roof of the church is spangled with stars, and the moulding and bosses at the intersections are gilt. Trinity Church is remarkable for a large stone pulpit against the south-east pillar of the intersection with transept, with steps to it. The church is greatly disfigured by galleries, and an incongruous altar-piece, which ought to be removed.

Ford's Hospital is a beautiful example of timber building, with gablets, delicate tracery in the windows, and an inner court, and might serve as a model for a set of modern almshouses in a wood district, beyond the limits of the Buildings Act! The perfect maintenance of this gem is much to be desired.

At the *Bablake School* also, there is some wooden construction worth looking at. The chimney-piece in one of the rooms dated 1629 does not belong to the building, but was purchased at a sale, and brought there in recent times. Parts of the structure are much earlier than this date.

St. Mary's Hall, the meeting place of the corporation, and a very curious building, is, like other structures here, in a miserable state of decay. According to the person in charge of the hall, "It is not open, but we *shew* it." The interior of the hall is perpendicular, and has a good timber roof. There is some ancient furniture here, which has been engraved by Mr. Shaw. The old council chamber has some bits of good carving in the wood ceiling and on the walls. The kitchen appears to be earlier than the hall.

Previous to the visit, Mr. Fairholt had read a very interesting paper on

THE TAPESTRY IN ST. MARY'S HALL: MURAL DECORATIONS,

and the use of tapestry during the middle ages; from which, although we have not room to give it entire, we must make some extracts.

He said truly,—

"I need no excuse for bringing together a few notices of its use in our own country, as it will historically illustrate the tapestry with which I have more immediately to connect my remarks, will shew its early use among ourselves, the mode in which it was manufactured, and the way in which it was used as the means of teaching history, of recording the fanciful lays of the romancist, or the moral teachings of the soberer classes. By these means I shall be enabled to point out to your notice the peculiar place occupied by tapestry in the middle ages, the result of a peculiar phase of educational manners, which is strongly indicative of an age without general literature. The earliest notice of tapestry with which I am acquainted is in the Anglo-Saxon poem of Beowulf, in which we are told that in 'the great wine chambers,'

> 'There shone variegated with gold,
> The web on the walls,
> Many wonders to the sight
> Of each of the warriors,
> That would gaze as it became visible.'

In an age when few could read, and when nobles and warriors disdained that accomplishment as effeminate, the chieftain and his co-partners at the board might be, in some degree, instructed by a glance at the walls of his dining-hall; more especially when these stories were brought more vividly to mind by the lays of the attendant minstrels. It thus, in a non-reading age, filled an important office, at the same time that its primary use, that of furnishing and warming the ill-erected stone stronghold of the chieftain, was accomplished."

Passing by his general remarks we follow him to that part of the subject where he remarked upon the practice of decorating churches with mural paintings, which was all but universal in the middle ages, and they are now frequently brought to light when the whitewash is removed. Public buildings and halls were similarly decorated even to the middle of the sixteenth century, as shewn by a series of such ornamentations recently discovered at Carpenters' Hall, &c. Of a different character to all these, and of more interest, in a national and historic point of view, was the tapestry of St. Mary's Hall, Coventry. It was one piece, occupying the upper wall beneath the window, where the dais, or place of honour, was for the principals of the guild.

"The tapestry was divided into six compartments. One was devoted to the figure of the Trinity, which had been cut out, and a figure of justice substituted: and which was made expressly for the situation it occupies, as appears by the border. This probably took place in the reign of Elizabeth. A figure of the Virgin occupies another compartment. Two others are filled with saints and angels; but the most important were the two lowest side compartments, representing Henry VI. and his Queen, Margaret of Anjou, attended by their court in attitudes of devotion. The loyalty of the Coventry men to the unfortunate Henry VI. was really due to that monarch, as he had given them great privileges. In 1451 he bestowed on that city a very particular mark of his affection, by erecting, with a considerable district around it, a county, by the name of the city and county of Coventry, and ordered that the bailiffs from that time should be sheriffs.

Queen Margaret was so attached to Coventry, and her residence there was so frequent, that the city was termed "Queen Margaret's Bower." When the Guilds of St. Catherine were joined to the Trinity, Our Lady, and St. John the Baptist, this accession of members and wealth induced them to build the Hall of St. Mary, for their joint meetings, about the beginning of Henry VI.th's reign. The tapestry was certainly not of the same antiquity; the costume, in the peculiar pattern upon the robes of the queen and others, shewed that it was executed in the reign of Henry VII. It was unfortunate that the corporation books would not furnish them with earlier entries than the beginning of the sixteenth century. The last reparation of the tapestry was in 1826, it was then taken down, recleaned, and repaired. The portion of tapestry at present remaining in St. Mary's Hall covered but a small space of the wall. It was evident that much more was there at one period, and there were two pieces now in London, which were said to have been brought from the hall, which there was very little reason to doubt. One was in the possession of Mr. Pratt, of Bond-street, the other, an imperfect fragment, in that of Mr. Baylis, of Fulham; they belonged to a city antiquary some forty years ago, named Charles Garnold, and were publicly sold at his sale as Plantagenet tapestry from St. Mary's Hall, Coventry.

The very common use of tapestry for "best rooms in England" may be inferred from Mrs. Quickley's exclamation when Falstaff desires her to put off her garment:—"By this heavenly ground I tread on, I must be fain to pawn both my plate and the tapestry of my dining-chambers." But Falstaff tells her, "A pretty slight drollery, or the story of the Prodigal, or a German hunting in water-work is worth a thousand of these fly-bitten tapestries." These water-works and "painted cloths" were coloured in distemper either on the walls or in cloth. Of the former, Mr. Knight, in his Pictorial Shakspeare, has given a curious example from Grove House, Woodford Common, Essex, which bears date 1617, and which was painted on the wall; while the Triumphs of Julius Cæsar, by Andrew Mantegna, at Hampton Court Palace, are similarly executed in water-colours, but upon cloth, and are good illustrations of the other variety in use. But there was yet another kind of hanging of an early origin, to which he (Mr. F.) must allude, and that was of leather. From the Crusaders came accounts of the Oriental practice of covering walls with prepared or ornamented skins, chiefly those of goats and sheep. These were rectangular, or stuck together. Such hangings, or leather tapestry, were manufactured much at Venice and Cordova, and were sometimes either gilt all over or ornamented with gilt devices, in which case they bore the name of D'or Basane. Of this class of hangings, a curious fragment which once decorated the house of Albert Durer, at Nuremberg, was now in the collection of the Government School of Design, at Somerset House."

Before mentioning other places of interest visited by the association, we will give a short memorandum of a paper read by Mr. Bracebridge, on

THE REMAINS OF KINGSBURY,

a seat of the kings of Mercia, on the river Tame.

On the south of the remains, running east and west above the ravine, was a length of 71 feet of very ancient wall of sand-stone, now about 20 feet high, and terminated at each end by an octagonal tower, the sides of which were 7 feet. The wall, which is in good preservation, and of very ancient construction, was about 10 feet thick, admitting a narrow passage from tower to tower in its centre, which appeared to have been extended from the base of the S.W. tower through the north to a sally-port, now closed up. The wall extended, with a small deviation of line, 51 feet beyond the gate, and was here probably intercepted by a tower; this, however, had disappeared, and no further remains of the ancient structure were to be discovered, except in the foundation of a large oblong building within the court, unattached to any ancient structure of that early period. Three sides of a court to the west, forming a mass of buildings covering an area of about 80 feet square, had disappeared, and the whole place was now occupied as a farm-house, but the structure was exceedingly solid, and the high-pitched roof excellent. Mr. B. described the church of Kingsbury to be a handsome structure, with a square tower, in the style of the early English period. It was separated from the hall by the ravine before alluded to. On the north side was an elegant edifice, elaborately finished in an early style also, and communicating with the nave and aisles of the church by two arches; this was the Bracebridge chapel.

We add notes of a paper read at the same meeting, by Mr. Dunkin, on

LESSNESS ABBEY,*

although not immediately connected with Warwickshire.

The writer observed, that Dr. Stukeley states he saw the north wall of the church nearly entire. His sketch represents the upper portion pierced with seven lofty lancet windows, despoiled of tracery, and the principal entrance near the western end, surmounted by a semi-circular arch of the earliest Norman period, whilst several smaller windows below are represented crowned only with a segment. But the doctor's usual accuracy here fails; for though, when some time since examining the ruins, with Stukeley's sketch in his hands, the writer found the upper part of the walls taken down to the string-course on which the cills of the windows rested, the lower part was still entire, several of the lower windows existing in the places indicated in the sketch. These are, however, of the early lancet form, and though the opening is of considerable width in the interior, it diminishes to a space of little more than 5 inches on the outside, scarcely ornamented with a single moulding. Part of a receding architrave still decorates the jambs of the western entrance, but the arch being gone, its character cannot be ascertained.

The whole area of the church, cloisters, and lodgings of the monks, is still, as in Stukeley's time, a market garden; but no tombstone now remains on the eastern side. From certain indications in the boundary wall, it would appear that the church was originally about 40 feet wide and 97 feet in length, and that the tower, a structure only about 17 feet square, abutted against the northern side of the church, between the nave and the chancel, of which it formed a component part. A doorway, apparently of the time of Edward I., still exists at the south-western course of the garden, and seems to have been the principal entrance into the abbey and opening into the cloisters beneath the refectory, a building that stood on the southern side of the quadrangle opposite the church; the kitchen adjoined; the dormitory surmounted the cloisters, and the rest of the building contained the chapter-house and the conventual offices. The convent garden still remains inclosed within its ancient boundary.

The farm-house, pulled down three years since, was the site of the residence of the founder, and rebuilt by the abbots. It was in accordance with the architecture of the period, and was in capital preservation—rubble below, timber stud-work above. In it was a noble hall, containing the old solid refectory-table and the dresser, and it bid fair to last for ages. At one end was a beautiful and grand staircase which led to the lodging rooms. To the left was the finely panelled parlour. Lesness Abbey was desecrated with nineteen other "meanly endowed" religious foundations by Cardinal Wolsey, to furnish funds for building two "seminaries of learning in Oxford and Ipswich. Of the former, no relic remains save a wretched drawing by Neale; of the latter only a tottering, uncouth, brick portal."

* Lesness Abbey stands about 2½ miles to the westward of the new pier at Erith. It is in the parish of Erith, in the county of Kent. It was founded in 1178, by Richard de Lucy, chancellor to Henry II.
Weaver, the author of "Funeral Monuments," was rector of "Loosmore" in the reign of Queen Elizabeth.

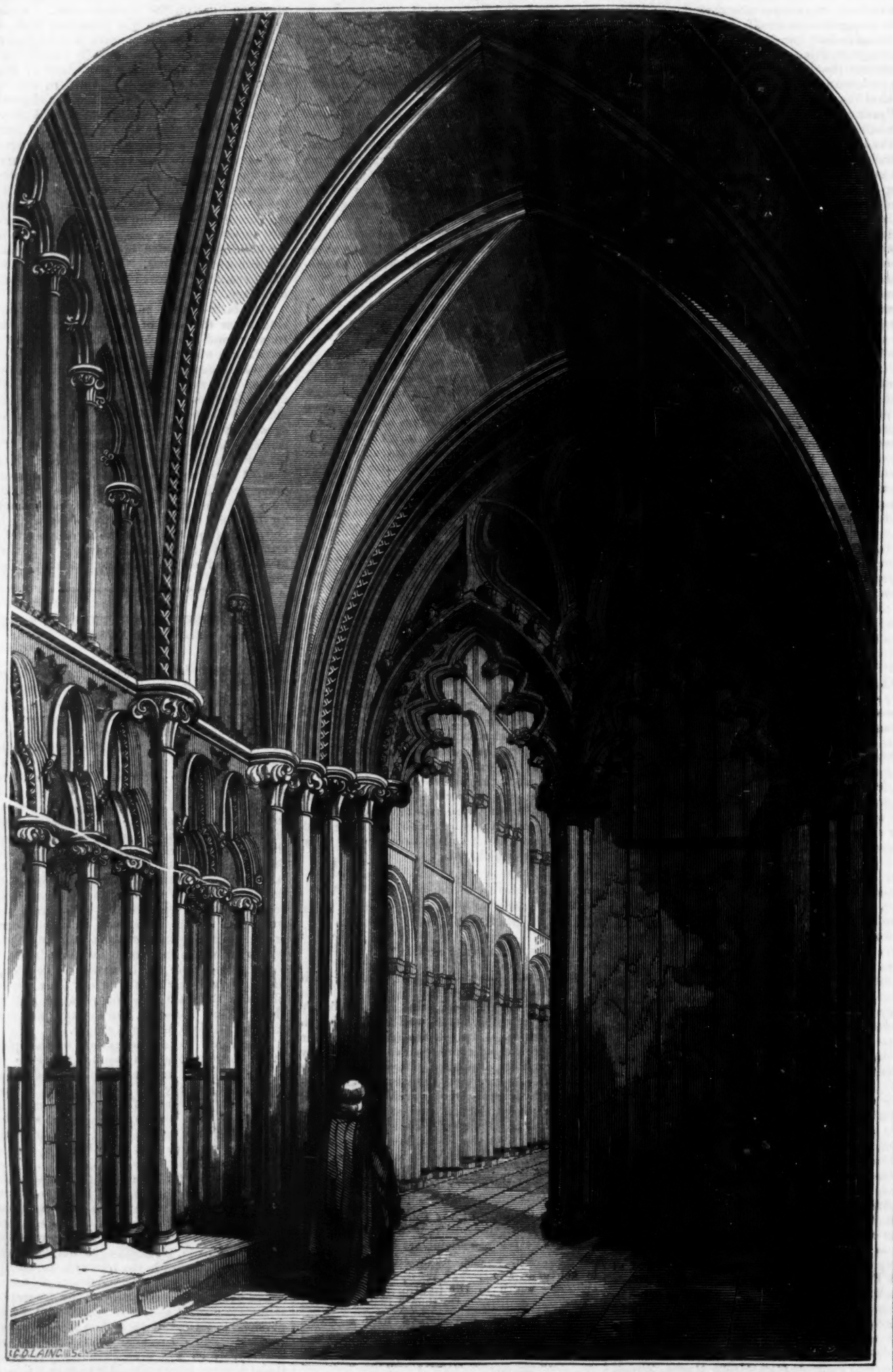
THE PROPOSED ALTERATIONS IN WESTMINSTER ABBEY.

We have before alluded to the dissatisfaction with which the proposed alterations in Westminster Abbey are viewed by a large number of persons, and we are anxious to obtain some further consideration of the matter before the works are proceeded with. The outlines of the proposed plan, so far as we have been able to ascertain them, are to remove the present wood-work of the choir, to substitute stalls of an ecclesiastical character, to leave the present stone screen which shuts off the choir from the nave, but to remove the organ which now surmounts it; to divide that instrument into two parts, one of which is to be placed over the stalls on each side of the choir, but to remove the present close screens which separate the choir from the transepts, and to substitute moveable open screens in their place, *and to admit the congregation* for whom increased accommodation is to be provided, *to the transepts*. The clergy and choir will continue to occupy their present places in the stalls, the congregation will fill the choir and transepts, and the nave will continue as hitherto, perfectly empty.

There are various objections to this plan. It is urged, that as sound proceeds in a straight line, and loses much in distinctness if it diverge at an angle, it is evident that the voice of the minor canon in the stalls, who chants the prayers, will fall very indistinctly on the ear of a person in the transepts, viz., in a part of the building at right angles to that which he occupies.

It seems that the experiment was tried at the consecration of the colonial bishops on St. Peter's day, and though those who were engaged were moved to the east of the choir, and exerted a power of voice much greater than is usually requisite, we understand that they were not distinctly heard in the transepts, especially in that on their own side. Another objection urged against the occupation of the transepts, is the vicinity of statues in all attitudes, of all persons, in all costumes, from a full-bottomed wig and peer's robes to an absence of all drapery, which will scarcely admit the devotional feelings which should influence a Christian congregation. At all events, the monuments will have to be removed before the force of public opinion. Accommodation,

THE GALILEE PORCH, ELY CATHEDRAL.*



* See page 370, in present number.

GRADATION OF THE ELLIPSES.

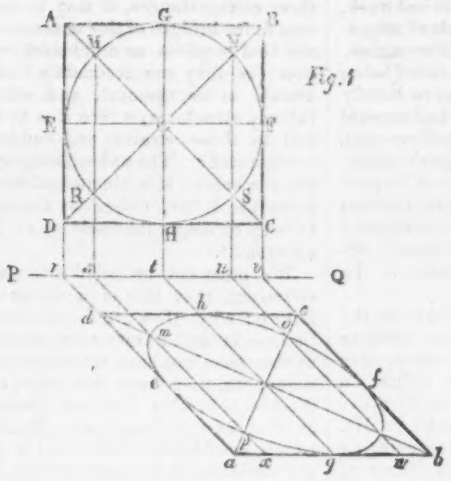


Fig. 1

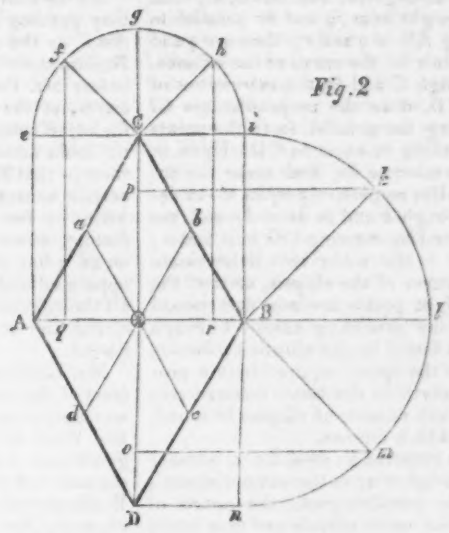


Fig. 2

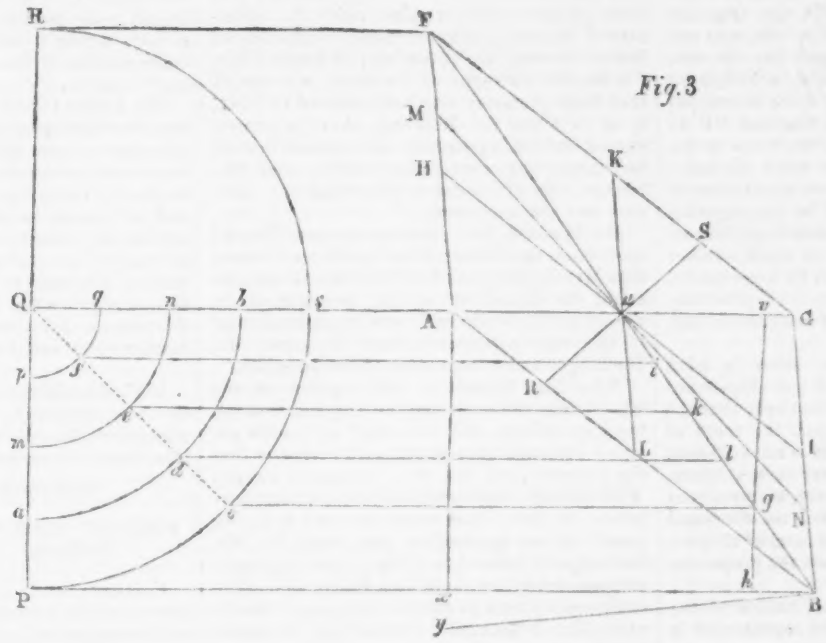


Fig. 3

however, must be given, and the question is how. We would answer, throw open the nave by removing the screen at the west end of the choir. Objections have been raised to this, but all of them may be removed; and next week we will refer to them with that object in view. It is to be hoped that the dean and chapter will pause yet a little.

ON THE GRADATION OF ELLIPSES.

In architecture and some other branches of the constructive arts, it frequently happens that a number of concentric ellipses have to be delineated in the same plane, and in such a manner, that the space contained between any two contiguous boundaries shall not be of equal wideness all round, but foreshortened in one direction and elongated in the other. This is called the *gradation of ellipses*, and an easy and expeditious mode of effecting the gradation is a desideratum which the present paper is intended to supply.

If a circle and its circumscribing square be viewed obliquely in a given angle, the orthographic projection of the square will become a rhombus, and that of the circle an ellipsis; this is the first principle to be attended to in the theory which we are now about to explain, and since the principle is simple, the theory to which it is to be applied will be found to partake of a similar character.

Let ABCD in the annexed drawing, fig. 1, be the given square, and E G F H its inscribed circle, and let it be supposed that the rays are incident at an angle of forty-five degrees. Draw the diagonals A C and B D intersecting each other in ⊙ and the circumference of the circle in N, M, R, and S; and through the centre ⊙, and parallel to the sides of the square, draw the straight lines E F and G H meeting the vertical and horizontal sides in E, F and G, H; then will the projections of the four points in the sides of the square, with the four corresponding points in the circumference of the circle, be eight points in the circumference of the projected ellipsis; this at once points out the principle of construction for the projected figures.

Assume any point P in the plane of the figure, and through P draw the straight line PQ parallel to DC, the side of the square, and produce the vertical sides AD and BC to meet PQ in r and v, and through the points M, G, and N draw the vertical lines Ms, Gt, and Nu to meet the same line PQ in s, t, and u. Then, at the several points r, s, t, u, and v make angles equal to forty-five degrees, so that the straight lines ra, sx, tg, uw, and vb may lie in the direction of the incident rays. On ra or any other of these parallels set off the distances rd, re, and ra respectively, equal to rD, rE, and rA, and through d, and a draw dc, and ab parallel to the directrix PQ and meeting vb in c and b; then is the rhombus $abcd$ the projected representation of the square ABCD. Draw the diagonals ac and bd, and the parallel ef; then will the several points of intersection at e, m, h, o, f, n, g, and p, be eight points in the circumference of the projected ellipsis, through which points the curve itself may very easily be traced.

It may sometimes happen, but more especially in the projection of solid bodies, that the rhombus or parallelogram itself is given in which it is required to inscribe an ellipsis, or a series of concentric ellipses having the condition formerly alluded to; in this case the square and its inscribed circle by which we determined the points of projection are not given, but it is easy to perceive that by a reverse process, the square and the circle could very readily be found; it is, however, not necessary to do so, for by examining the preceding construction a method will instantly suggest itself of doing the same thing directly from the rhombus as it is given.

Let ACBD, fig. 2, be the given rhombus in which it is required to inscribe an ellipsis, by means of eight determinate points in its circumference. Draw the diagonals AB and CD, intersecting each other in the point ⊙, which is the centre of magnitude of the figure: then through ⊙, and parallel to the sides of the rhombus, draw the straight lines ac and bd, marking out the points a,c and b,d, which are four points in the circumference of the ellipsis, corresponding to e,f and h,g in the preceding construction.

Through A and B, the extremities of the diagonal AB, draw the perpendiculars Ae and

B*i*, meeting *ei* the parallel through C in *e* and *i*, and making *ei* equal to the diagonal AB. On *ei* as a diameter describe the semicircle *egi*, and make the angles *eCf* and *iCh* respectively equal to 45 degrees, and through *f* and *h* draw the straight lines *fq* and *hr* parallel to *Ae* and meeting AB in *q* and *r*; then are *q* and *r* two other points in the curve of the ellipses.

Again, through C and D, the extremities of the diagonal CD, draw the perpendiculars C*i* and D*n*, meeting the parallel *in* in the points *i* and *n* and making *in* equal to CD. Upon *in* describe the semicircle *ikn*, and make the angles *i*B*k* and *n*B*m* respectively equal to 45 degrees, and through *k* and *m* draw *kp* and *mo* parallel to C*i* or D*n*, meeting CD in *p* and *o*; then are *p* and *o* the other two determinate points in the curve of the ellipsis, so that the whole of the eight points are now determined the same as in the preceding case. Through the points thus found let the ellipsis be drawn, and it will be the figure required by the problem. And exactly in the same manner may the points for any number of ellipses be found, as in the case which follows.

Should it be required to describe a number of concentric ellipses upon the same diagonals or in the same parallelogram, the points of construction for each ellipsis are very easily determined, for we have only to divide the radius PQ, fig. 3, into as many parts, either equal or in a given proportion, as there are ellipses required, the points of division being at *amp*; then with the several radii QP, Q*a*, Q*m*, and Q*p*, describe the quadrants P*cs*, *adb*, *men* and *pfq*, which bisect by the straight line Q*c*, and from the points of bisection, *c*, *d*, *e* and *f*, let straight lines *cg*, *dl*, *ek* and *fi*, be drawn parallel to AG and meeting the diagonal BF in *g*, *l*, *k*, and *i*; then will these be points in the respective ellipses, and if the same distances be set off from F along FB, an equal number of points will be determined in the opposite direction. Let a similar operation be performed with the other diagonal and an equal number of points will, in like manner, be ascertained, so that any required number of ellipses may be described with the greatest imaginable ease and facility.

It may now be useful to show in what manner the principal axes of the ellipsis are to be found, since it is from these only that the ordinates can be computed, and the truth of the construction verified, for it is not sufficient to ascribe an elliptic character to the figure, because it assumes an oval form, as numerous oval figures can be constructed on the same axes, all of them presenting the form of ellipses, while not one of them possesses the properties peculiar to the conic curve.

The equation by which the nature of the conic ellipsis is defined, may be represented in the following specific form, viz.:—

semi-trans.^{2} : semi-conj.^{2} : : rec. abss. : ord.^{2}

and making the product of the mean terms equal to the product of the extremes, it becomes *semi-trans.*^{2} × *ord.*^{2} = *semi-conj.*^{2} × *rec.abss.*; then by resolving this equation in reference to the ordinate, its value will be found by an evolution of the first degree. Thus we have

$$Ord. = \frac{semi\text{-}conj.}{semi\text{-}trans.} \sqrt{rec.\ abss.}$$

Therefore, by taking certain points in the transverse axis, and calculating the ordinates corresponding to those points by means of the above formula, the truth of the construction may then be inferred from the coincidence of the measured and calculated results. This method of proof, it is true, is not scientifically rigorous, but it is sufficiently accurate for shewing that the curves produced in this way are ellipses.

When the position of the conjugate diameters is given, that of the principal axes can easily be found, for we have only to bisect the angles made by the conjugate diameters, and the straight lines bisecting the opposite sides of the parallelogram; then straight lines drawn through the centre and the points of bisection both ways, will be the principal axes. Thus, bisect the angle F*w*H, fig. 3, by the straight line MN drawn through the centre *w*, to meet the opposite sides of the parallelogram in the points M and N; then is MN the position of the principal transverse axis, and if RS be drawn at right angles thereto, also passing through the centre, it will, in like manner, point out the position of the principal conjugate axis.

BUILDINGS NEAR DANGEROUS MANUFACTORIES.

THE REFEREES AND THE MAGISTRATES.

At the Surrey adjourned quarter sessions the long-pending question of "Boulanger *v.* Sugden," on the construction of the Metropolitan Buildings Act, came on on Tuesday in last week, before Mr. Puckle and a full bench of magistrates, at the Sessions-house at Newington, for adjudication. The facts of the case (being no doubt familiar to our readers) were briefly these,—that Mr. Sugden, a builder, had erected certain houses near the Bermondsey New-road, within a few feet of Mr. Boulanger's manufactory, where a dangerous business is carried on as a hat japanner, and the official referees appointed under the Act had fully investigated all the circumstances, and, by their award, declared the erections of Mr. Sugden to be illegal.

Mr. Ballantine addressed the jury on the facts of the case, and proved that the business was dangerous, by Mr. Hudson, the surveyor to the West of England Insurance Office, a gentleman from the Norwich Union Fire Insurance Office, Mr. Wilson, foreman to Mr. Boulanger, Mr. Henry Hobbs, a manufacturing chemist, Mr. Richard Phillips, professor of chemistry to the Commissioners of Woods and Forests, and others.

Mr. Petersdorff, for the defence, contended that the business was not dangerous, and that these premises did not come under the operation of the Act, as they were partly commenced before it came into operation; and called Mr. Porter, the surveyor of Lambeth, who stated that these premises were commenced in 1844, so as to evade the Buildings Act; a person, named Garratt, a japanner, who denied that oil and turpentine were inflammable; and Mr. Clarke, who attempted to prove that the business was not dangerous.

Mr. Hesketh, the district-surveyor, deposed that when the houses were in course of erection Mr. Sugden told him that Mr. Boulanger could be turned out at any moment, or he should not have allowed them to proceed; and it was only afterwards that he knew Mr. Boulanger had a long lease of the premises.

After Mr. Ballantine had replied on the whole case, the chairman, having summed up, the jury retired, and after half an hour's absence returned into court with a verdict that the business was not of a dangerous nature. This verdict was received with manifest surprise. As three other cases remained to be disposed of, an application was made by Mr. Boulanger's counsel to allow a new jury to be empanneled to try them on a future day. The chairman refused to allow a new jury; whereupon Mr. Boulanger's counsel said it would be vain to enter into the cases with the present jury, and should for his part decline any further part in the matter. The jury then, without evidence, gave verdicts for the defendants in the three other informations!

DEE BRIDGE: THE REMAINING RIBS.

The directors of the Chester and Holyhead Railway are now making preparations to test the fellow rib to the one broken by the late lamentable accident.

It has been removed from its original position to the abutment on the Saltney side of the river, and placed upon supports of masonry erected for that purpose, and they are now engaged collecting railway bars to weight it with; the test as recommended for bridges of this character in a former number of this journal. We believe it is intended to test this rib to its breaking weight, and this, if correctly and carefully done, will set at rest the much disputed question of the power of these ribs to sustain the load they were intended to support, which will be exceedingly satisfactory, so far as a weight at rest goes; but a further test is wanted, and that of a totally different character: we want data to calculate the effect of vibration, oscillation, and concussion, occasioned by the transit of heavy loads at varying velocities. These are the destructive agents of both wrought and cast iron, as evidenced in the former by the repeated failures of the axles of engines, carriages, &c., and the necessity there exists for their being frequently changed; and in the latter, by that of cast-iron girders. Cast-iron is a material so brittle in its nature, that girders are frequently broken by the motion of the carriages upon which they are being conveyed, as frequently in the course of erection by sudden jerk, from the slipping of the chains or otherwise; and if accident should occur, and the girder fall, a fracture is the inevitable result. Under these circumstances, it may be asked, is cast-iron fit for bridges of this character? Is a material that requires so much care in its preparation (as they are frequently broken at foundries), in its removal, and erection, fit for railway structures, where it is at all times subject to those strains and sudden blows just enumerated? The unhesitating answer is, no! and the sooner it is abandoned for railway purposes the better, either by the good sense of railway directors themselves, or by legislative enactment.

We must not be lulled into security by the statement, that this is a solitary instance of failure: why, they are *too numerous* to mention, as is well known to railway officials, but as they have not been attended with fatal consequences, they have not been made public. Accidents of this kind are always hushed up, as that at the Tam Valley Bridge, at Tamworth, would have been, had it not been for the vigilance of the editor of the *Birmingham Journal*.

Mr. Stephenson, himself, admits that cast-iron *alone* is not a suitable material for railway bridges, or he would not have brought to its aid as he has done (though erroneously applied), wrought-iron tension bars in many cases similar to the Dee Bridge, and in other cases, timber.

The bridge is now open for passenger traffic, the ribs having been supported at intervals by piles driven into the bed of the river; and we believe it is the intention to strengthen this bridge by throwing out struts from the piers and abutments to the joists of the ribs, and connecting those struts with horizontal pieces of timber or collar-beams secured to the central division of the rib. Surely if the bridge requires this foreign aid, it may be considered an additional argument against the further use of cast-iron for such purpose.

B. B.

N.B. Should the bridge be strengthened in the way proposed, the position of the ribs should be altered, as a curve in a bridge of this nature is exceedingly objectionable.

FOREIGN ARCHITECTURAL AND COLLATERAL INTELLIGENCE.

Contracts and Tenders—in Egypt.—The works of the embankment of the Nile proceed satisfactorily, and it is expected to see them in an adequately advanced state at the period of the next inundation of the river. The estimates first made by the engineer amounted to *about* two millions of dollars—but now the same party states them at six millions; and the viceroy, who seems to be quite awake, and prepared for such contingencies, says that he thinks they will be near eight millions. The worst is, that some believe that the work will not answer its purpose.

Statues of great Men—on the Continent.—The colossal image of Frederic the Great, made of cannon by the royal founder, Mr. Klagemann, at Bresslau, has been completed, and brought from the arsenal of that city to the Guard-Place. The elegant pedestal of Silesian marble made by Stonemason (*Steinmetzmeister*) Mr. Burgerstab, is also near its completion—and the festival inauguration of the monument will take place at the next Bresslau wool fair.

Public Sitting of the French Academy.—20th July. The chair was taken by Mr. Reinaud, who distributed a number of prizes, of which we may mention the following. A medal was given to Mr. A. Lenoir for his "*Etudes* on the Gothic Architecture of France;" to Mr. de Caumont for "Monumental Statistics of Calvados." Numismatic prizes were given to Messrs. G. Ricci and Lecointre-Dupont for their works on the coins of *Luceria*, and those of Normandy and Poitou respectively. Mr. Lenormant read his report on the *Memoirs* sent, and expatiated on the daily increased difficulty of selecting amongst such a mass of monographies—but concluded by saying very truly: "it is out of such provincial monographies that the history of the country is to be composed." The following authors

of printed or MSS. memoirs crowned, deserve also notice. *Ed. Clerk*, the Roman Franche Comté, elucidated from its ruins, in 8vo.—*Abbé Cochet*, the churches of the arrondissement of Havre, 2 vols. 8vo. — *A. de Boisseau*, the old inscriptions of Lyons, 8vo.—*H. Bointhibault*, Memoir on the Collegiate Church of St. André, at Chartres, MS.—*Bouillet*, Monumental Statistics of the Dept. du Puy de Dome, MS.—Abbé *Texier*, History of Glass Painting in Limousin, 8vo.—*Fontenay*, Fragments of Metallurgic History, 8vo.—[*Journal des Débats.*]

The Library and Archives — of the Heraldic College of Paris have been transferred to a part of the ancient Hotel Choiseul, where two fine saloons (decorated in the style of Louis XIV.) have been allotted to them.

The Statue of Marshall Drouet d'Erlon—has been just exhibited in the Champs Elisées, previous to being conveyed to Rheims—the birth-place of this old soldier of Napoleon. It is the work of a very young man, Mr. Louis Rochet; and the bronze used weighs 1,200 kilos., cast in the foundry of Messrs. Eck and Durand of Paris.

RAILWAY JOTTINGS.

The installation of the Prince-Chancellor at Cambridge is said to have added no less than 5,000*l.* to the week's receipts of the Eastern Counties Company.——The reduced rate of fares and tolls to which the Great Western are restricted by recent Acts of Parliament, is said to be considerable: first class, London and Bristol, from 27s. down to 21s., and all the other classes in proportion.——All the lines of which Mr. Hudson is chairman, are said to have conveyed stock and implements free of charge to the Northampton 'show' meeting of agriculturists. If the usual charges on these lines, however, be so much higher than others, as they have been declared to be, the public themselves are the real sources of a 'show' of generosity such as this, to which, notwithstanding, let all due credit be given. ——The contract for stations at Stamford, Ketton, and Luffenham, is said to have been taken by Messrs. S. Groocock and Yates.—— The Trent Valley line is to be opened for traffic on 1st September.——The *Bradford Observer* announces 'probably the cheapest and certainly the most complete and comprehensive railway trip that has ever been offered to the public.' This rather novel affair, in fact, consists of a tour for 'the million' to the lakes, the Isle of Man, and the sister kingdoms of Ireland and Scotland, diverging from Fleetwood, to which 'the million' were to concentrate from Birmingham, Leeds, and Manchester, &c.; with a choice of returning on any day from the 3rd inst. (the day of departure) till the 13th: fares 'exceedingly cheap and all arrangements liberal.'—— Captain Coddington, R.E., the Government inspector, has 'thrown up his commission, and abandoned the certainty of promotion' for the appointment of manager of the Caledonian line for ten years, with an annual salary of 1,800*l.* for the first three years, and 2,000*l.* for the remaining seven. —— The flow of the Tweed has almost suffered the fate designed by a cockney once on a time for the Thames itself, by being all but choked up and arrested by the tumbling of a bridge, 'on a gigantic scale,' now, or rather lately, in course of erection over it at Ashysteel, where its premature ruins now lie 'like a vast dam' across the channel. 'Mr. John Smith, one of the architects, had just examined it, and seen nothing wrong.' There were two arches, both of Whinstone: span 135 feet. The 'balancing' was in the act of being put on, but seems to have proved to be 'heavy weight' rather for the gigantic mass to sustain. No lives, however, were lost.——A serious accident occurred on the Dundee and Perth line, near Dundee, on the 22nd ult., from the embankments not having had sufficient time to consolidate, it is thought, and by the consequent sinking of both embankment and rails, whereby the engine of a train ran off the line, and led to the destruction of several carriages by the concussion, and to the death of one if not more persons, and the severe injury of six others.—— The Waterford and Kilkenny line, near Kilkenny, according to the *Kilkenny Moderator*, has of late 'progressed in the most astonishing and rapid manner,' under the contractorship of Messrs. Hammond and Murray. The station-house is 'rising with a rapidity almost equal to the magic palace of Aladdin,' ominous, we hope not, of an equally magical disappearance like that of this notable edifice. It is satisfactory, in the meantime, however, to know, that 'the contract to Lavistown will undoubtedly be finished at the period prescribed—next month—to the great advantage of the company.' ——All the engine drivers employed on the Jamaica railway are American blacks, who have undergone a strict examination by a European engineer, and are said to discharge their duties with exemplary skill and attention. ——The Atlantic and the Mediterranean, says a foreign paper, will be united with Moscow and Petersburg in a few years. In the meantime, the whole of the line from the frontier of Austria, to Warsaw, which it places in direct communication with the great lines of Prussia and Austria, is about to be opened for traffic.——The *Presse* announces the opening of the line from Orleans to Bourges, on Tuesday week before last.——The obstacles presented to the introduction of railways in Holland by the prevalence of navigable canals and the treacherous nature of the ground nearly every where throughout the country, have been engaging the ingenuity of the engineer. A design for the obviation of the former difficulty has been suggested by the Chevalier Conrad, the engineer of the Amsterdam and Rotterdam railway; he gives it the name of a *crane-bridge*, "*pont à grues*," in opposition to that known in England as a *swing-bridge*. Literally, it is said, the name is true, as the iron girders are nothing else than eight cranes, four on each side, corresponding to the four lines of rail, and so fastened together, that by the application of wheel machinery to one side, the whole frame-work falls back in a line parallel with the pier, leaving a sufficient opening to allow a vessel fully rigged to pass easily between. The same machinery is used to bring the series of cranes together again, when a few bolts or catches suffice to retain them firmly in a position that trains may pass over them in perfect safety. M. Conrad states that bridges on this construction are attended with little or no vibration on the passing of a train, and that they are worked with ease and precision.

ELECTRO TELEGRAPHIC PROGRESS.

A letter from Hamburg states that a company has been formed by the merchants there to establish a line of electric telegraphs from the mouth of the Elbe to that of the Weser, to which others are to be added afterwards, communicating with the principal towns in the north of Germany.——The *Kentish Mercury* states that the Electric Telegraph Company here are "now making such arrangements as will enable them to communicate the true time, as observed daily at the Royal Observatory, at Greenwich, to every station on the various lines of railway where the company has a telegraph station, and, of course, to all large towns throughout the kingdom." It must not be overlooked, of course, that however useful a general adoption of the true time at Greenwich throughout all the large towns in the kingdom may be, the true time at Greenwich would itself be a very false time at all towns that lie either west or east of the line of its precise position north and south. For the mere *adjustment* of the different times in various towns, however, by the true time at Greenwich, the plan to be adopted must be one of great and general importance. The contrivance itself by which the end in view is to be daily accomplished is very simple. The indicating ball at Greenwich Observatory, when it begins to fall at one o'clock, is to strike a spring, which, connected with the company's various lines of electric wire, will instantly strike a bell at every station. Thus it is not only possible and practicable, but what in all probability will be a matter of daily experience ere very long,—that before the ball at Greenwich Observatory shall have reached the ground in its fall, the electric bell at Manchester, for instance, will have been struck and set ringing; so that it shall be known there that one o'clock has been announced at Greenwich, before the ball there announcing the fact by its fall has fallen even a single foot!

NOTES IN THE PROVINCES.

The consecration of St. Matthew's Church, Widcombe, took place on Tuesday week. It is built in the decorated Gothic style, and consists of a nave and chancel, with north and south aisles the whole length of the building. The tower is surmounted by a spire or broach, about 155 feet high. Internally, the chancel is separated from the aisles by a carved stone screen. The church gives accommodation for 1,250 persons, of which 500 sittings are free. There are also 290 sittings for children. The pulpit is of stone, with tracery. The pews are of stained deal. The heads of all the windows are filled with flowing tracery. The tower contains the six bells formerly in the tower of the old parish church.——It is proposed to erect a new hall for the holding of the county court at Monmouth.——The foundation of the new church to be erected at Etruria, in the Potteries, was to be laid last Thursday.——A new Independent chapel was opened at Crewe, on Wednesday week before last.—— Stringent measures are being adopted at Liverpool under the local Sanitary Act, for the suppression of the smoke nuisance, on which subject there seem to be some rather restive attempts to resist, or, in fact, to burke the clause altogether, either by the use of insufficient or negligently worked apparatus, or by the counter-charge that such practices have "a tendency to destroy boilers, so that great danger was to be apprehended therefrom both to property and to human life." In reply to the first of these attempts, the magistrate declared that the penalty was exigible if the apparatus, which had been found sufficient, were negligently used. As to the second, the magistrate was taken a little aback, and adjourned the case before him (that of a company of ironfounders at Windsor) for further evidence on a point "so seriously affecting the manufactories of the town." Evidence was thereupon given that smoke consumers, similar to that in question, had been used for several years in the Harrington Water Works, and did not injure the boilers. The magistrate, Mr. Rushton, considered this evidence satisfactory, and "hoped that every person connected with furnaces would take warning." One of the parties charged now shifted his ground, and declared that he had applied the apparatus, but could not work it. Mr. Rushton referred him to the town council to rectify any thing that might be wrong, but as the law stood must insist on the fine being paid.——A meeting of the Architectural Committee on the Scarbro' parish church tenders, was held on Saturday before last, when Mr. Christian, the architect, was present. The meeting took place in consequence of the contracts having come in not only heavier than was expected, but exceeding all that was anticipated, to a great extent. The contract for the stone work alone, exceeds 3,300*l.* For the whole building the contracts will require 6,000*l.* To this must be added 1,000*l.* for architect's per centage, and incidental and other items. The committee, it is said, do not feel justified in taking any step for commencing the repairs until the subscription list reaches 5,000*l.*, instead of 3,250*l.* as at present. Lord Hotham has given 200*l.* towards the restoration.——A new tower to Seamer Church, to be erected by the lord of the manor, Mr. W. J. Denison, was laid week before last, according to the *Leeds Intelligencer*.——The church of St. Mary, Gateshead, has been repaired, cleaned, and re-opened.——Very extensive copper mines have been discovered near Kilbirnie, in Scotland. Mr. Bennet, an extensive English miner, says the *Glasgow Gazette*, is on terms with the proprietor, Mr. T. Paton, for a lease.——The weekly wages expended at the Forth Iron Works, near Stirling, are about to be increased from 1,000*l* to 2,000*l.* by the operation of three new furnaces in addition to the five now in use, and a new blast-engine, which with its fellow will yield a blast to the amount of 350 horse power.—— The small town of Girvan, which ten years ago had only two churches and two chapels, has since then had three new churches built for an increase of population not above 700 or 800. The multiplication of sects appears to have been the exciting cause. There are nine of these at present, all differing in one form or another.—— The pavement trade of the county of Caithness, celebrated for its flags, employs, says *Jerrold's*

Weekly Newspaper, 700 men on the spot, and gives considerable employment to shipping. ——The Duke of Sutherland is said to be making a princely addition to Dunrobin Castle at Inverness, where he has ninety masons busily at work in the preparation of the castle for the anticipated reception of her Majesty, for whose occupation state apartments are being expressly built. Besides the occasional use of Caen stone, the buildings are of 'a beautiful white sandstone from the duke's own quarries at Brora.'——The average daily number of persons employed on public works in Ireland for the week ending 10th July, was 36,952; total expense 12,446*l.* In the week preceding, the number was 40,705; expense 19,127*l.* The stoppage of the public works is eliciting 'indignant outbursts' from various quarters.

AWARDS OF OFFICIAL REFEREES.

WOOD DRESSINGS TO EXTERNAL OPENINGS.

With regard to four houses in James-street, Bethnal-green, Alfred Single, in altering them, had constructed the door-dressings to each house of woodwork. This was objected to by the district surveyor, and not being altered, was communicated to the official referees.

The referees determined, "that the door-dressings in question are projections from a face wall not forming a part thereof, and that not being made of fire-proof materials are contrary in this respect to the Metropolitan Buildings Act, as alleged in the said information; and, moreover, inasmuch as it does not appear to us that there is any sufficient reason, economical or otherwise, for the use of wood as outside linings or as dressings to doorways, we do hereby direct the said Alfred Single forthwith to remove the woodwork in question, that is to say, the outside linings and dressings to the doorways of the houses in question, being Nos. 5, 6, 7, and 8, James-street, Bethnal-green."

The awards of the referees, during the past month, relate chiefly to the projection of buildings before the "general line of fronts," wherein each case stands on its own merits, and has little public interest.

BLIND BUILDERS.

The following tenders were received at the Office of Sewers for the Tower Hamlets, on the 29th ult., for 1,150 feet of second size sewer, in New-road, St. George's-in-the-East.

Pegram	£1,150
Blackburn	1,000
Shalders	947
Munday	920
J. Hill	900
Wilson	799
Stewart	798
Curtis	792
Crook	792
Batterbury	773
Livermore	767
W. Hill	766
Yeoman (accepted)	695

Tenders for repairs, &c., at a house in Hatton garden, under Mr. C. Broadbridge.

Langmead	£351	0
Kemp	338	0
D. Bodjer	329	10
T. Bodjer, Hatton-garden	230	0

The last accepted.

Tenders opened at Lambeth Workhouse on 26th ult., for repairs to be done at the Norwood School of Industry.

Walker and Soper	£334	10
Pritchard and Son	329	19
Wells	319	10
Buck	299	0
Crawford	290	0
Thompson	243	0

City Improvements.—The Remembrancer having announced that the City Improvement bill in the line to St. Paul's had passed through Parliament, it was proposed and agreed to that the work should not be proceeded with until it be determined from what source the funds required for carrying the improvements into effect were to be raised. The subject was referred to the improvement committee.

PROPOSED MUSEUM OF SCULPTURE.

M. Jules Sohn, to whose invention for the multiplication of works of art we have already referred, has published a proposal, from which we take the following:—

"The situation of the sculptor is scarcely better than that of his art. The isolation of which we have spoken is fatal to him in the last degree. Immured in his solitary studio, none interest themselves in his welfare; when he awakes from his dream of study, and attempts to carry his designs into execution, he becomes the prey of the hungry dealer, who cares not for the dignity of art. Even in the present day, when publicity seems so easy of attainment, how many fine statues and *bassi-relievi* remain unnoticed in the dust of the studio! For the few who have acquired fame and fortune, how many men of genius are exposed to the numerous difficulties which beset the path of those who possess no other resources than their own talents; how many are compelled to renounce a career that filled their youth with pleasing and hopeful aspirations; how often does the strength of genius bow in the struggle; how much oftener is it forced to undertake works frivolous and unworthy, instead of those which would confer honour upon their creator! Governments, generally speaking, are incompetent to remedy the evil, however they may have the desire so to do; the power they possess being necessarily limited."

"A general museum of sculpture, similar to that in Paris, will be established in London—the centre of the industrial world; which contains within itself so many resources of art, and is, consequently, a suitable place for such an establishment. Into this museum, which will remain a permanent exhibition of all the *chefs-d'œuvre* of sculptures, we would gather such subjects as should form a complete and continuous history of the art. Here, reproduced by the best artists and by the most efficient means, will be found, by the side of the sublime creations of Greece and Rome, the sacred sculptures of the middle ages, the elegant and refined works of the *Renaissance*, and the finest statues of modern times; the collection will, therefore, be a treasury for all the plastic wealth of Europe. It is proposed to execute reduced copies of every work consecrated by the admiration of ages, and to place under contribution—in order to make the museum universal—every public and private gallery, the cathedrals, palaces, and royal gardens; in short, every place where the art of Phidias and Michael Angelo appears in all its grandeur and its glory. This gathering of works of diversified character will allow of a classification of the different schools, and of the various epochs; it will give a new impulse to historical study, and, at the same time, will furnish the student with ready means for completing his education, by enabling him to refine his taste and his style by a constant reference to the masterpieces of art, without the danger of weakening or entirely losing his own originality. Art has no country that can entirely claim her as its own; we shall, therefore, receive with pleasure our brethren from foreign lands. France and England are too little acquainted with the genius of their neighbours; the names of Thorwaldsen, of Rauh, Rietschel, Schwanthaler, Banks, Bacon, and Flaxman, are celebrated; but their works are almost or utterly unknown among foreigners; and their reputation has not yet received that meed of applause which consecrates their glory, and which each country is willing to bestow."

"But it is no part of our design to limit the contents of our museum to statuary works alone. Paris, it is well known, has for a long time enjoyed the privilege of furnishing Europe with architectural decorations; still her best artists are fully aware that what has hitherto been done in this branch has arisen from a mere mercantile spirit, and the moulding of these ornaments has therefore become a business exercised without knowledge and without taste; no doubt some modellers have produced correct and elegant designs, but, *as yet*, no manufacturer is to be found whose works are entirely satisfactory; neither is there any collection so extensive as to afford the architect a varied and judicious choice. We are desirous of extending to England the benefits that France now enjoys. By collecting from the earliest and best sources, from antiques and the monuments of the sixteenth century, we hope to restore to ecclesiastical ornamentation the important position it formerly occupied; by an intelligent reproduction of the finest examples of antiquity, and a careful selection of modern works, we shall doubtless render our gallery worthy the attention of every architect. Besides the objects already referred to, it is intended to add a rich and varied collection of models adapted to the industrial arts; thereby constituting ourselves a medium of communication between the artist and the manufacturer, the gold and silversmith, the wood-carver, and all who practise a business in which the fine arts are concerned, so that the artist may have a fair opportunity of exhibiting his productions without the labour and loss of time he is at present subject to."

WESTMINSTER COMMISSION OF SEWERS.

At a court held on the 27th ultimo, Capt. Bague in the chair, several important questions in connection with the new Act were discussed. Mr. John White proposed a series of resolutions to enable the commissioners to carry out the Act, but it was considered better to do nothing hastily, and ultimately Mr. White confined himself to a motion for the preparation of a complete map of the jurisdiction of the court, which he thought could be done for about 2,000*l.* On this an amendment was moved to the effect that the surveyor should first report on the means of obtaining this map and the probable expense, which was carried by ten to nine. Mr. Gunter and others urged that the plan was essentially necessary.

It was resolved *nem. con.* that the bye-laws should be revised with reference to the new powers of the commission. Further,—"That in all cases where new sewers may be required to be made, or open sewers to be arched over, until the regulations and bye-laws be revised, and until further order, the mode of proceeding with the works, giving the necessary notices, and of paying for the same and recovering the costs thereof, be decided upon in each case by this court with the advice of their solicitors."

Mr. John White then moved, and Mr. Chalmers seconded, a resolution,—"That in order to prevent inconvenience to the public, the clerk and the surveyor be conjointly empowered, to grant permission to proceed with the necessary works to such persons as shall present applications in the usual form for sewers and drains, and who will bind themselves to abide by the printed regulations of the court with regard thereto; a list of the applications so granted being presented at the next meeting of the court,"—when there appeared ayes, thirteen; noes, one.

It was then resolved *nem. con.* upon the motion of Mr. Harrison, seconded by Mr. Le Breton, "That owners of sewers built within thirty-five years who shall make application under the new act for parties to be compelled to lay drains into such sewers, be required to present a plan of the entire length of the sewer, or sewers, so built by them, shewing the several houses and premises fronting thereon, with the sums already paid for each house, from which a drain has been laid, and also showing the length of frontage, and the amount demanded for laying a drain from each of those houses from which they desire that a drain should be now laid into the sewers so built by them." The present commission, it may not be generally known, expires in December next.

The Royal Academy.—At a council held on the 26th inst., the following gentlemen were admitted probationers in the Royal Academy of Arts, London. Edward Thomas Coleman, Robert Charles Leslie, Thomas Daggett, Charles Wright, John H. Smith, Wynne William Watkins, Arthur Hughes, John Brown, George Knowles, David Nathan Fisher, Richard Hollingdale, John Cleghorn, Walter Goodhall, Charles Fowler, Edward Lance Tarbuck, Charles Augustus Gould, Benjamin James Benwell, Joseph Thomas, George Bidlake, Bright Smith, William Purdue, John Pollard Peppercorn, Joseph Gawen. George Jones, R.A., Keeper.

August 6, 1847.

Correspondence.

THE NEW COUNTY COURTS.

SIR,—Can you or any of your readers give me a satisfactory reason, why the erection of the new County Courts in Westminster, Shoreditch, Bristol, Royston, and Liverpool, should be confided solely to the care and ability of the surveyor to the Metropolitan Police Force; and no public notice be given of their intended erection inviting competition for designs? Surely the Secretary of the Home Department in the pressure of public business has overlooked this matter. Would not the present be a good opportunity for the display of more of that article, which throughout all England partakes very much of the nature of angel visits, I mean good taste, than we can possibly extract from the designs carried out at the Southwark, Vincent-square, and other recently erected Police Courts? Surely the principle of free trade may be extended to such a case as this.

AN ENEMY TO ALL MONOPOLY.

Aug. 3rd, 1847.

Miscellanea.

IVY ON CHURCHES.—Relative to a quotation on this subject, which we lately inserted, the *Gardeners' Chronicle* says:—"Can any one inform us what learned man it was who first denounced the Ivy? That would be a curious chapter in ecclesiastical history which should tell how it came to pass that the great natural ornament of our churches was first expelled from holy places, and forbidden to guard them from decay. Is it possible that there still exists the man who thinks that ivy hastens decay? that buildings perish because it clings to their masonry and guards them from the storm? that brickwork, and stonework, and woodwork rot the more the drier they are kept? The supposition is incredible. We know that even the mud-walls of a farm-house stand the better for the ivy that mantles over them, and that the soundest part of a building is just that which the ivy occupies. We are told, indeed, that notwithstanding all which can be said to the contrary, ivy does destroy old buildings; and a very intelligent correspondent says, that he knows of 'a church which has been rendered so unsafe from the cracks in the tower, *caused* by a large mass of ivy, that it has been disused.' But we must contend, with all submission, that here is a mistake. We are not to infer that ivy causes cracks because it is associated with them. It naturally grows in neglected places, and in such situations buildings become ruinous. Rags and poverty are also associates; but it will hardly be argued that rags cause poverty. In truth, ivy is incapable of the action assigned to it. Its little roots are merely for enabling it to cling to the body which bears it, and to suck up what moisture they may find there. They cannot insinuate themselves between mortar joints, and displace masonry. On the contrary, the nutrition of the ivy is carried on by roots buried in the soil, and acting like those of other trees. We apprehend that the mistake has arisen from cracked and crumbling walls having been overgrown with ivy, which having introduced its shoots into the fissures, or perhaps formed a real root therein, if earth and other matters should have been collected, have then, by horizontal expansion, widened the rents, and so in time overthrown the masonry. We submit that the 'episcopal eye' is turned quite in a wrong direction when it frowns upon ivy; and that its severity should be directed to the churchwardens who fail to take care of their masonry. Instead of tearing away ivy, stonework should be repaired. To destroy the plant will not uphold the building. If the structure is ruinous, it will not become whole again by scraping its surface. When properly repaired, the ivy is its best friend, and we strongly suspect that, although not repaired, a ruin will last longer when covered with this plant than when left naked to the effects of a few winters."

THE TUBULAR BRIDGE.—General Pasley has published a protest against the tubular bridge, as now proposed to be executed, chiefly on grounds of objection first urged in THE BUILDER.

PROJECTED WORKS.—Tenders have been called for by advertisement for the erection of an infirmary at Watford; the completion of a row of houses in Albany-road; repairs and restoration at Normanton Church; building a barn and cart-shed with granary above near Stuntney by Ely; taking down and rebuilding a farm-house at Chignal Smealy; constructing two tanks and gas-holders at Westminster; making and building a new sewer at Kensington; and executing river-works and low-water landing place, with short railway connection with pier at Ferry-Port-on-Craig, river Tay, on the line of the Edinburgh and Northern Railway.

THE NATIONAL MONUMENT AT EDINBURGH.—A new movement has been made towards a renewal of the works of this contemplated restoration of the Parthenon on the Calton Hill of the modern Athens,—the mere laying of the foundations of which, it may be remembered, and the erection of the western portico which has so long stood, like our own monument to Nelson, a monument of more things than one, cost no less a sum than 15,000*l.* It is now proposed to cut away the church and sepulchre clauses from the Act for its erection, clauses which have long been felt to hang like a millstone round the neck of this ambitious project; and to devote the edifice at large to the purposes of a "Scottish Pantheon, or Gallery of Honour, for the reception of monumental busts and statues of great and distinguished men, whether statesmen, warriors, poets, men of literature, science, artists, &c., not limited to Scotland, or even Great Britain, but open to great men of all nations." The pediments and metopes, together with the friezes of the peristyle, are proposed to be decorated with national sculpture, and the interior with painting illustrative of Scottish and British achievements, whether in fresco, encaustic, or oil, as may be decided upon. Ere now its object was less comprehensive, though its scale was equally magnificent: for its former object was limited to "national gratitude for the successes of the British arms by sea and land in the late eventful war." It being rather *too late* now, however, to carry out such an object with any thing like a prospect of success, far less of enthusiasm, a new Act is proposed to be applied for, providing for the establishment of 5*l.* shares to the amount of 150,000*l.*, instead of 25*l.* shares to the amount of 50,000*l.* only, for the purpose of bringing the whole into shape. It is probable, however, that many of the citizens of Edinburgh will now almost regret any further addition to the picturesque and majestic pillars by which their city has been so long surmounted.

'NOTHING LIKE LEATHER.'—At a formal confabulation of assaulted citizens, on the urgent subject of strengthening the fortification of their city walls, as well, no doubt, as of their imprisoned valour, a leather merchant boldly and professionally declared that 'there was nothing like leather.' We are, therefore, persuaded, that an ingenious American citizen of Allegany—not the rocky mountain, but the 'city'—must have been a leather merchant, who,—surrounded too by imprisoning walls, and assaulted by that enemy to many an ingenious handicraftsman, the criminal law,—is said to have lately found 'nothing like leather,' for not only resisting the assaults of that thief of an enemy no less than enemy of a thief—Time,—but for placing him in clockwork harness; this ingenious handicraftsman having successfully tried his crafty hand, and cheated himself, if not the law, out of the time appointed,—in the manufacture of a *leather clock*, which, to all appearance, goes as well as any ever made of wood by his kinsman, Samuel Slick, of Slickville, Esquire.

FURNACE FOR BURNING BRICKS.—J. W. Andrews, Norristown, Pennsylvania, April 4th, 1846; added to original patent, bearing date March 21st, 1843.—Claim.—"Having thus fully set forth the manner in which I construct and use my kiln for burning bricks with anthracite, or other coals, what I claim as new, and desire to secure by letters patent, is the two principal flues passing outside of the kiln—one on each side, and one centre flue, passing through the centre and under the floor of my kiln. These main flues are connected with lateral flues, or branches (as described in my original patent), necessary to conduct the wind required under each fire or into each air chamber.

SURREY COUNTY LUNATIC ASYLUM.—The proposed enlargement of the Surrey county Lunatic Asylum, lately formed a subject of consideration at the Surrey Sessions, when a report by the Committee of Visiters was read, reciting that after the original plans, at the estimated expense of £35,000; had been ratified at the Quarter Sessions in June, 1846, approved, after alteration, by the secretary of state, and submitted for tender to eight of the principal builders in the metropolis, the county surveyor had instructed the several builders to tender only for a portion of the work, estimated by him at a cost of £28,238, and that after the lowest tender, Mr. Kelk's for £35,500, had been corrected, by a suggestion that certain fire-proof and other improvements and alterations estimated at a cost of £3,027 5s. 5d. should be abandoned, and by the discovery of a deficiency in the architect's estimate of £3,599, arising from the adoption of an erroneous basis for his calculations, the committee had submitted the whole plans to the consideration of another architect, Mr. Thomas Hopper, who suggested that Mr. Kelk's tender was a reasonable one, which it would be injudicious to reject, although it should be so altered as to comprise every part of the work. It was reported, therefore, that the several plans, working-drawings, and specifications, since their completion, had been submitted to Mr. Kelk, who had sent in a second tender for £36,500. The court approved of the report, which also provided for the architect's commission at 4 instead of 5 per cent., and resolved that the Committee of Works be empowered to expendi n the erection and completion of the proposed enlargements, a sum not exceeding £43,000.

ANCIENT RELICS.—On the 8th instant, a stone coffin was discovered by men who were excavating for the Monmouth and Hereford line, about a quarter of a mile from Caerleon, in the road to Usk. A drawing of it has been forwarded to us, which shews that it was 6 ft. 2 in. long, 24 in. wide at the shoulders, 11 in. at the top, and 10 in. at the bottom. The sides were about 3 in. thick, and the bottom 3½. The lid was hollowed out to fit on to the coffin. The stone is oolitic, quite different from any to be found in the neighbourhood, and in good preservation. The coffin contained a skeleton and a small glass bottle with a very small neck. The local antiquaries ascribe it to a very early date.

COMPETITION.—Plans and estimates are wanted for a county lunatic asylum at Worcester, for 200 patients, with an infirmary, surgery, &c.

TENDERS

Delivered for building new vicarage house, at Pulloxhill, Beds.

Neal	£1,279
Bryant and Francis	1,178
Cobble	1,158
Welch and Burrows (accepted)	1,130
Curtis	1,018

For the Ipswich District Schools.

H. Luff	£1,025
F. Mason	978
W. Ribbans (accepted)	960
G. Ellis	850

TO CORRESPONDENTS.

"*Variation of the Needle at London*," is 25° 40′ west.

"*Elastic Moulds*."—A correspondent wishes to know how to make the new elastic moulds for casting figures in plaster of Paris, and the ingredients of the composition.

"*J. A. P.*"—Next week. The notes alluded to will doubtless make an interesting paper.

"*W. B.*"—The remark was not ill-meant, but would have been better out.

"*R. W.*"—Weale, Holborn.

"*Hardening Stone*."—The process for hardening stone, recently described by us, see p. 359, *ante*, has been applied successfully, we believe, to chalk. With the patent process advertised we are not acquainted.

"*Monitor*."—The basis of the design in question is the Cornaro Palace: more of this hereafter.

"*P. W. W.*"—Several recipes for removing painting from old oak have appeared in our pages. We will refer to them.

Received.—"J. H." (Ely), "G. R. L.," "H.," "C. B. W." (Thanks), "G. P.," "Norfolk Artizan," "J. D.," "C. R. C.," "H. F.," "A Junior." (We avoid recommendations).

Books.—"The Art-Union Journal" for August (a capital number). "The Tradesmen's Book of Ornamental Designs." Part III. (Orr, Paternoster-row). "Delman's Magazine," for August. "The Epochs of Painting Characterised." By Ralph N. Wornum. (Cox, King William-street). "The Law Relative to Benefit Building Societies." By Charles Egan, Barrister at Law. (Hastings, Caryl-street). "The People's Journal," No. I. of new volume.

"*Books, Prices, and Addresses*."—We have not time to point out books or find addresses.

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Every additional Thirty Words	0	1	0
One Column	2	2	0
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ADVERTISEMENTS.

ROYAL POLYTECHNIC INSTITUTION.

COLLINS'S ODE on the PASSIONS will be recited by Mr. J. RUSSELL, with Illustrations in a Series of DRAWINGS magnified by means of the OPAQUE MICROSCOPE, accompanied by Music by Dr. Wallis, on the Mornings of Tuesday, Thursday, and Saturday, and on the Evenings of Tuesday and Thursday. Dr. Bachhoffner's LECTURES on NATURAL PHILOSOPHY will comprise the Subject of the ELECTRIC TELEGRAPHS, &c. CHEMICAL LECTURES by H. M. Noad, Esb., on the Evenings of Monday, Wednesday, and Friday. The beautiful OPTICAL EFFECTS include the last DISSOLVING VIEWS. DIVING-BELL and DIVER, with EXPERIMENTS, &c. &c.—Admission, 1s.; Schools, Half-price.

TODD'S PATENT PROTOXIDE PAINT manufactured by CHAS. FRANCIS and SONS, CEMENT WORKS, NINE ELMS, LONDON.

The properties of this Paint are peculiar for preventing iron from oxidation, wood from decay, and masonry from damp; it neither cracks nor blisters with the hottest sun, and is therefore most valuable for Railways, Boilers, Steam, Gas, and Water-pipes; Hothouses, Forcing-houses, and for Shipping. Its adhesion is so great to iron and wood, that the hardest friction will scarcely remove it. It prevents vegetation on stuccoed buildings, and is not affected by spray of sea-water.

PROTOXIDE PAINT is sold ground in oil, and, compared with white-lead, its property of concealing is as 75 to 50, so that one hundred weight is equal to one and a half of lead. It works well under the brush, and forms with oil an unctuous and cohesive mixture. If blended with other paints it has a softer tone than white-lead. For houses painted during occupation, it is most preferable, being perfectly innoxious.

WALLIS'S PATENT LIQUID WOOD KNOTTING.—This newly-discovered Liquid Composition, which Messrs. Geo. and Thos. Wallis have the satisfaction of introducing to the Trade, possesses the important qualification of effectually stopping Knots in Wood, however bad, and preventing them eating through and disfiguring the paint above.

Many substances have been used and much time spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and anxiously called for.

In the application, skill is not required; it is put on to the work with a brush like common paint, can be used in all climates and situations, and does not require heat.

Sold wholesale and retail, by Messrs. G. and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 64, Long Acre.

STEPHENS'S PROCESS for DYEING or STAINING WOOD, as a substitute for Paint. The natural grain of wood is imitated by art, but the most successful imitation has a sameness of appearance when compared with the continual variety which different woods present in their natural grain. To give an ornamental colour to the wood without obscuring the grain, is the object of this process, which surpasses paint in appearance, while at the same time it is so economical that the whole interior of a house, which would take a month or six weeks to paint in the usual manner, may be finished in one week by the process above named, and be more pleasing when finished. The dyes or stains are prepared and sold by HENRY STEPHENS, 54, Stamford-street, Blackfriars-road, London, in bottles of 6d. and 1s. each, and at 10s. per gallon. The oak colour may be obtained in powder at 8s. per pound, which dissolves in water to form the liquid, and one pound will make one gallon of stain.—N. B. The Trade supplied.

Sold also at the office of "THE BUILDER," 2, York-street, Covent Garden, London.

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Manufactory, 96, Regent-street, and 131, Chancery-lane.

THE Patentee having fixed a great number of his shutters in London, and given universal satisfaction can confidently recommend them both for security and durability, the edges being sheathed with Iron. Their construction is so simple that the largest establishment can be opened or closed with the greatest possible ease without the use of machinery. Their superiority over other revolving shutters consists in their great strength and stiffness, being without metal hinges, consequently cannot rust, buckle, be strained, or get out of order, and are safer. Persons dissatisfied with the patent rising gear now used for iron shutters can have it removed, and the shutters made to draw up in any part of the premises with the slightest exertion, without machinery, thereby avoiding the unpleasant use of oil.

INJUNCTION.

BUNNETT and CORPE'S Patent REVOLVING IRON SHUTTERS.—Since the verdict found in favour of the Patentees, in the Court of Exchequer, in the action tried by order of the Court of Chancery, that Court has granted a perpetual Injunction for restraining all infringements of this Patent, and therefore all parties are hereby cautioned against infringing the same.

THE PRICES ARE GREATLY REDUCED, and BUNNETT AND CORPE'S PATENT IRON SHUTTERS ARE THE CHEAPEST AS WELL AS THE BEST. They are made with convex laths, if required. The worm and wheel motion for raising and lowering revolving iron shutters (as secured by this Patent) is the only safe and durable mode of effecting that object. In large shutters it is indispensable.

Some thousands of Bunnett and Corpe's Shutters have now been put up, without a single complaint of their want of strength or security; and nine years' practical experience (during which they have adopted every real improvement) enables the Patentees to challenge comparison with any others. They will guarantee all Shutters put up by them to keep in order, and last twice as long as any with thin convex laths.

B. and C. also manufacture REVOLVING WOOD SHUTTERS the Patent for which has expired), at the same prices as other makers, but greatly superior, being fitted with their patent raising gear, and proper metallic hinges, without which no shutter can be safe or durable.

BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC SASH-BARS, MOULDINGS, &c., IN BRASS, COPPER, OR ZINC, FOR SHOP FRONTS, WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES.

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TO BE DISPOSED OF, 50,000 Feet sup. of new Stout Common-tooled York paving, at 44s. per 100 feet sup. on the Wharf, or delivered within three miles, 46s. per 100 feet sup. Terms, Cash on delivery. Messrs. PRATT and SEWELL, Albert Wharf, Wharf-road, Battle-bridge.

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PAVING, 2s. 9d. PER SQUARE YARD. Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of Pavement laid down at the above low price, and the work guaranteed.—Apply to JOHN PILKINGTON, POLONCEAU'S BITUMEN PAVEMENT OFFICE, 15, WHARF-ROAD, CITY-ROAD.—N.B. Country Agents and Railway Engineers and Contractors supplied with the best bitumen for covering bridges and arches.

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A. BAKER, Stone Merchant, 33, Pratt-street, King's-road, Camden-town, opposite the Star Coal-wharf, begs to inform Builders and others, that he is selling Naileworth, Painswick, and other Gloucestershire Stone at the same prices as at Paddington; the Stone is equal to Portland for Staircase Steps, Landings, Coping, &c. Inch Slab 4½ per foot.

MARBLE, STONE, &c., Works, Commercial-road, Lambeth, between Blackfriars and Waterloo bridges. Monuments, Tombs, &c., for Cemeteries; Fonts, Altar-screens, Tracery, &c., executed in a superior style of workmanship. The country trade supplied with every description of ornamental masonry, figures, and ornamental modelling and carving. A collection of vases, pedestals, fountains, &c., in artificial stone for gardens, parks, or public buildings.

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LUARD and BEEDHAM beg to inform Architects, Surveyors, Builders, and others, that they have removed from Norway Wharf, Greenwich, the whole of their Caen Stone business, to the above extensive premises, where a large Stock will be kept up by continual fresh arrivals from their quarries at Allemagne. Orders received at the wharf, and further particulars may be obtained of Mr. GEORGE GATES, 18, Southwark-square, Borough, London.

Orders shipped direct from Caen to any port.

The Waterman Steamboats call at Lavender-pier, adjoining Caen Wharf.

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BUILDERS and MASONS can have every description of Stone in the London Market, either in the rough block, or cut to sizes from the saw, or prepared ready for fixing or fixed, avoiding either waste in the goods or carriage.

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MAGNUS'S ENAMELLED SLATE.—Under the patronage of Her Majesty, Prince Albert, the Duke of Wellington, and the principal of the Nobility, the most eminent Architects, Builders, &c. &c.—This beautiful material has been introduced into Buckingham Palace, the drawing-rooms at Osborne, Apsley House, Strathfieldsaye, &c. &c., and it is now taking the place of marble in the mansions of the nobility generally. It is also extensively used in Government offices, the principal railway stations, and other public buildings. It can only be distinguished from real marble by its superior brilliancy of polish, and it is more durable, and less liable to chip at the edges, than marble. The choicer productions, such as black and gold, sienna, jasper, verd antique, jet black, &c. are not more than one-third of the price of marble. Among the articles manufactured at the Pimlico Slate Works are chimney-pieces, consoles, billiard and table tops of all descriptions, pedestals, pilasters, columns, plinths, tazzas, mural tablets, baths, wash-stand tops, &c. &c. Cisterns, dairy shelves, flooring and plain slate work in general executed on exceedingly moderate terms. Welsh slate slabs, of the finest description, at very reduced prices.—N.B. The trade supplied with whole cargoes, self-faced, or planed on one or both sides, direct from the quarries.—A book of prices will be forwarded on application to Mr. MAGNUS, Pimlico Slate Works, Upper Belgrave-place, London.

SIR W. BURNETT'S PATENT for preventing the Decay of Timber, Canvas, and of all Vegetable and Animal Substances.

This process has long been in extensive use in her Majesty's Dock yards.—Vide Parliamentary Debate, April 13, 1847. It hardens and improves the texture of wood without injuring its elasticity, and renders it much less inflammable, and entirely so when prepared expressly for the purpose.

Licences granted to noblemen and gentlemen to use the preparation, and to contractors and others for the purposes of trade.

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When the quantity of timber to be prepared is large, special contracts will be entered into on advantageous terms.

A liberal trade discount allowed to Builders, Sailmakers, and others introducing business.

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THE Patent Desiccating Company beg to inform Architects, Builders, Cabinet Makers, Coach Builders, Ship Builders, and others, that their establishment (for seasoning, sawing, and planing wood), known as the Grand Surrey Mills, immediately adjoining the Commercial and East Country Docks, Rotherhithe, has commenced working. The sawing and planing will be done at the usual charges, and in the best possible manner. The new process of seasoning ensures the entire removal of moisture, hardens the gums, prevents further shrinkage (no matter how warm the temperature or hot the climate), strengthens the fibre, thus giving greater rigidity and compactness to the material, all of essential importance for floorboards, doors, shutters, and similar work. For licences to work the patent, scale of prices, or any further information, address, post-paid, or apply to W. H. TANQUERAY, Secretary, at the temporary offices of the Company, 28, New Broad-street, City.

N.B.—It has been satisfactorily ascertained that what are termed two-years seasoned flooring boards, contain from 8 to 10 per cent. of moisture, causing a shrinkage of one-eighth of an inch in the width of the board, which is obviated by the new process.

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ALWAYS on SALE, a Large Assortment of DRY PREPARED FLOORING BOARDS, and MATCHED BOARDING of all sorts, planed to a parallel width and thickness, from ¾ inch to 1¼ inch thick. TIMBER, DEALS, OAK PLANKS, SCANTLINGS, SASH SILLS, &c.

Apply at W. CLEAVE'S Timber Yard, Wilton-road, Pimlico (late C. Moore and Son).

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TIMBER of any Size, PLANK, DEALS, and BATTENS, &c. Sawn on the most approved principle. Boards, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks and carted home free of charge.

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